

Ref. No. 3437

# ONKYO SERVICE MANUAL

# QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-SV303PRO



# Black model

BHMD, BHMDN, BHUD, BHUDN 120V

120V AC, 60Hz

# SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS INDENTIFIED BY MARK ▲ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CTRCUTT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.



### **SPECIFICATIONS**

#### **AMPLIFIER SECTION**

Power Output:

Stereo mode

80 watts per channel min. RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.

Surround/Multi mode

75 watts per channel min. RMS. at 8 ohms both channels driven, from 20Hz to 20,000Hz, with

no more than 0.08% total harmonic distortion. (FRONT)

12 watts per channel min. RMS, at 8 ohms 1,000Hz with no more than 0.8% total harmonic

distortion, (REAR or REMOTE) 0.08% at rated power (FRONT)

Total Harmonic Distortion: IM Distortion:

0.08% at rated power (FRONT)

Damping Factor:

60 at 8 ohms (FRONT)

Sensitivity and Impedance: Phono:

2.5mV/50 kohms 150mV/50 kohms

CD/Tape Play: Tape Rec:

150mV/2.2 kohms Pre out (CENTER): 1V, 2.2 kohms

Phono Overload: Frequency Response: 120mV RMS. at 1,000 Hz, 0.08 % THD.

RIAA Deviation:

20 to 30,000 Hz, +/-1 dB 20 to 20,000 Hz, +/-0.8 dB

Tone Control:

BASS: +/-10 dB at 100 Hz TREBLE: +/-10 dB at 10,000 Hz PHONO: 80 dB (IHF A. 5mV input)

Signal to Noise Ratio:

CD/TAPE: 100 dB (IHF A)

Muting:

- ∞ dB

#### **VIDEO SECTION**

Signal sensitivity and impedance

VDP/VCR normal input, output: 1 Vp-p, 75 ohms

#### **TUNER SECTION**

FM:

Tuning Range:

87.5 - 108.0MHz (100kHz steps)

Usable Sensitivity:

11.2dBf, 2.0µV Mono:

Stereo: 17.2dBf, 4.0μV

50dB Quieting Sensitivity:

Mono: 17.2dBf, 4.0μV Stereo: 37.2dBf, 40μV

Capture Ratio:

1.5dB 40dB

Image Rejection Ratio: rF Rejection Ratio:

90dB

Signal-to-Noise Ratio:

Mono: 73dB

Stereo: 67dB

Alternate Channel Attenuation:55dB

50dB

AM Suppression Ratio:

Total Harmonic Distortion:

Mono: 0.15%

Frequency Response:

Stereo: 0.25% 30 - 15,000Hz ±1.5dB

Stereo Separation:

45dB at 1kHz/30dB at 100 - 10.000Hz

Muting Level:

17.2dBf, 4µV

**GENERAL** 

Power Supply:

AC120V, 60Hz

Dimensions (W x H x D):

455 x 140 x 331.5 mm 17-15/16" x 5-7/8" x 13-1/16"

Weight:

9.9kg (21.8lbs)

AM:

Tuning Range:

530 - 1710kHz (10kHz steps)

Usable Sensitivity: Image Rejection Ratio: 30uV 40dB

IF Rejection Ratio: Signal-to-Noise Ratio: Total Harmonic Distortion: 40dB 40dB 0.7%

## SERVICE PROCEDURES

#### 1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit no. Part no. Description

F901 252051 △ 6A ST-6, Primary fuse F904, F905 252051 6A ST-6, Secondary fuse

#### 2. Change of FM/AM band step.

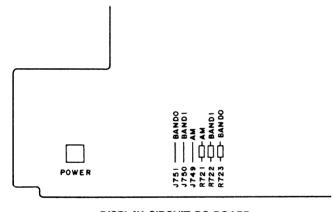
#### (FM)

BAND STEP	R723	J751
100kHz→50kHz	Addition	Open
50kHz→100kHz	Eliminated	Short

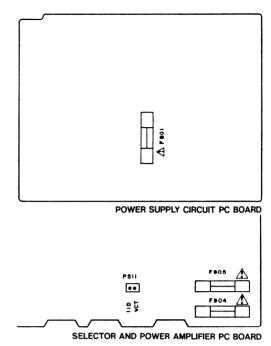
#### (AM)

BAND STEP	R721	J749	
10kHz→ 9kHz	Eliminated	Short	
9kHz→10kHz	Addition	Open	

In R721 and R723 Carbon resistor  $100k\Omega$  (Part No.417341044) are used.



DISPLAY CIRCUIT PC BOARD



#### 3. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

#### 4. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel. Specifications:  $3.3 \text{ Mohm} \pm 10\% \text{ at } 500\text{V}$ .

# **EXPLODED VIEW** P304 A11 P901 U5 υŚ ^A 20 A 15 F904 U 6 \_T 901 R ./ 10 Ú10 F905**b** A8 A41 A24 A11 A27 ^A 29

# **PARTS LIST**

A35

27175251 or

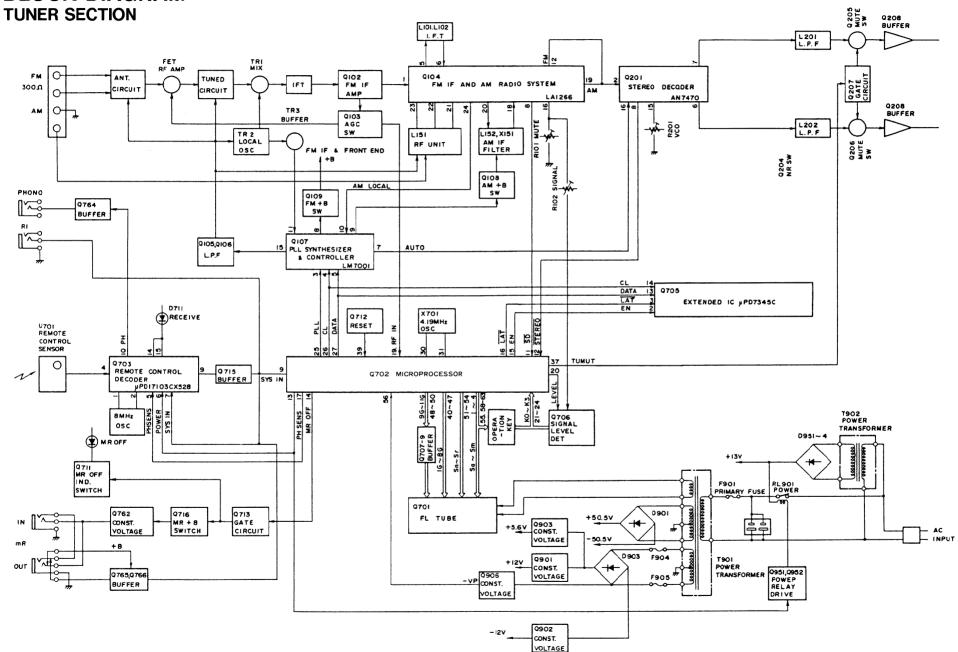
27175251-1

Leg

A1 A2 A3	27100239AY 27121616Y 27160287 27141474AY	Chassis Rear panel	F901	252051	⚠ 6A ST-6,Primary fuse
	27160287	Rear panel		202001	2. Ort 51 O,1 1 may 1 use
Δ3			F904	252051	▲ 6A ST-6,Secondary fuse
$\sim$	27141474 A V	Radiator	F905	252051	⚠ 6A ST-6,Secondary fuse
A4	2/1414/4A1	Bracket SH	F905b	29360626-1	Rating label, fuse
A5	27130653Y	Bracket H	JL701	2041322010	NCFC1-322010,Flat cable
A6	27141498Y	Bracket S	P304	25060044	Terminal GND
A7	27300750	<b>⚠</b> Bushing	P901	253163Y or	▲ AS-UC-6 #18,
A8	27190657	KGLS-18RT,Holder		253174Y	⚠ Power supply cord
A9	27190062	KGLS-12S,Holder	Q505,Q506	2201653,	2SC3856-O,
A10	801433	3SMS10W.SW+14B(BC),Sems self-tapping screw		2201654,	2SC3856-Y,
A11	834430088	3TTS+8B(BC),Self-tapping screw		2201655,	2SC3856-P,
A12	833430080	3TTP+8B(BC),Self-tapping screw		2202272 or	2SC3907-R or
A13	834430108	3TTS+10B(BC),Self-tapping screw		2202273	2SC3907-O,Power amplifier transistors
A14	830440089	4TTC+8C(BC),Self-tapping screw	Q507,Q508	2201663,	2SA1492-O,
A15	831130088	3TTW+8B,Self-tapping screw		2201664,	2SA1492-Y,
A16	82143015	3P+15FN(BC),Pan head screw		2201665,	2SA1492-P,
A17	82143006	3P+6FN(BC),Pan head screw		2202262 or	2SA1516-R or
A18	27110718Y	Front bracket ass'y		2202263	2SA1516-O,Power amplifier transistors
A19	28184476AY	Top cover	T901	2300666	▲ NPT-1110D,Power transformer
A20	834430088	3TTS+8B(BC),Self-tapping screw	U1	1 <b>A377587-5</b>	NAAF-4187-5, Selector and power amplifier pc board ass'y
A21	28141132	$6\times60\times40$ , Cushion	U2	1 <b>A377588-5</b>	NAETC-4188-5, Headphone terminal pc board ass'y
A22	28141132	$0.5 \times 390 \times 14$ , Cushion	U4	1 <b>A377589-5</b>	NADIS-4189-5, Display circuit pc board ass'y
A23	27170280AY	Bottom panel	U5	1A377590-5	NAAF-4190-5, Volume circuit pc board ass'y
A24	834430088	3TTS+8B(BC),Self-tapping screw	U6	1A377591-5	NADG-4191-5,RI/MR terminal pc board ass'y
A25	27190657	KGLS-18RT,Holder	U7	1 <b>A377592-5</b>	NASW-4192-5,Operation switch pc board ass'y
A26	1A377701K	Front panel ass'y	U8	1 <b>A377593-5</b>	NAETC-4193-5, Input balance volume pc board ass'y
A27	28125234BY	End cap L	U9	1 <b>A377594-5</b>	NARF-4194-5, Tuner circuit pc board ass'y
A28	28125235BY	End cap R	U10	1 <b>A377595-5</b>	NAPS-4195-5, Power supply circuit pc board ass'y
A29	833430080	3TTP+8B(BC),Self-tapping screw	U11	1 <b>A377596-5</b>	NAAF-4196-5, Video and sub amplifier pc board ass'y
A30	28191596A	Clear plate			
A31	28133262Y	Back plate			
A32	28324372	Knob VOLUME			
A33	28324376A	Knob TONE			
A34	28324378	Knob IB			

NOTE:
THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

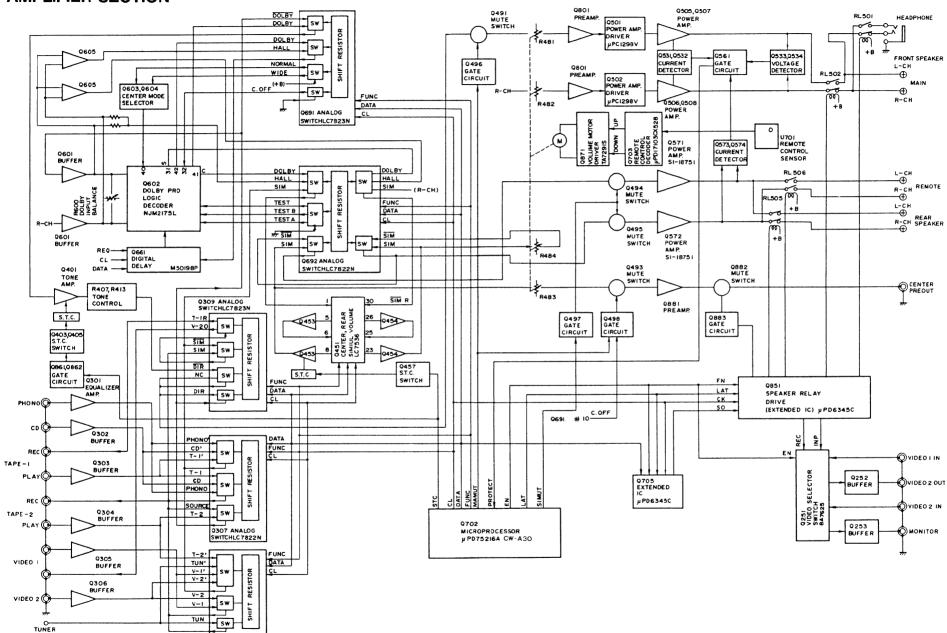
# BLOCK DIAGRAM



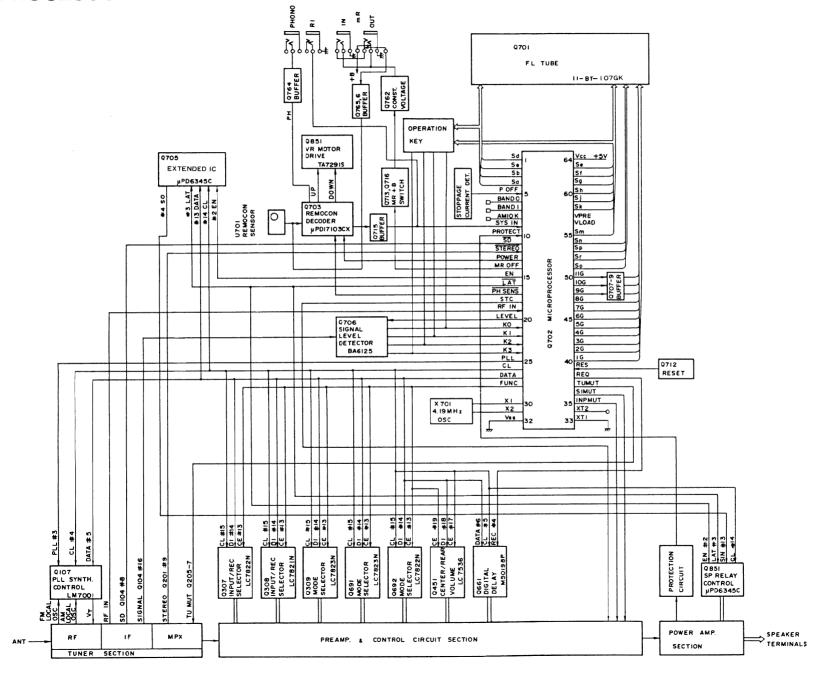
# **BLOCK DIAGRAM**

9308 ANALOG SWITCHLC 782 IN

### **AMPLIFIER SECTION**



# MICROPROCESSOR DESCRIPTIONS



# **Terminal Description**

Pin No.	Symbol	Description				
1	Sd					
2	Sc	Segment and key scan output terminals.				
3	Sb	"H" when active.				
4	Sa					
5	POFF	This is the input terminal for detection of the stoppage of electric				
<del></del>		current."L" when the stoppage of electric current.				
6	BAND0	Initializing input terminal for region setting of FM band.				
7	BAND1					
8	AM 10K	Initializing input terminal for region setting of AM band.				
9	SYS IN	System code input terminal."H" when active.				
10	PROTECT	Protection circuit operation detection input terminal. "H" when active.				
11	SD	Broadcast detection input terminal."L" when active.				
		Control the stop of auto tuning and output TU MUT(#37).				
12	STEREO	Stereo broadcast detection input terminal.				
		"L" when stereo broadcast.				
13	POWER	Power control output terminal."H" when the power turns on.				
14	MR	MR control output terminal. "H" when MR turns on.				
15	EN	Connect the terminal EN of the extended IC $\mu$ PD6345C.(Q705,Q851)				
16	LAT	Connect the terminal LAT of the extended IC $\mu$ PD6345C.				
17	PHONO	Phono control output terminal.				
18	S.TONE	SELECTIVE TONE control output terminal.				
		"H" when this switch turns on.				
19	RF IN	RF mode input terminal.				
		RF IN RF MODE				
		L LOCAL				
		H DX				
	i	Control the terminals LOCAL and DX of the extended IC.				
20	LEVEL	Signal level input control output terminal. The signal level is				
		inputed to terminals K0-K3 when this terminal is the high level.				
21	K0	Key scan input terminals when pin 20 is low."H" when active.				
		Signal level input terminal when pin 20 is high.				
22	K1	Signal level input terminal when pin 20 is night.				
LL	Ki	Var. input of I Signal level				
22	עט	Key input of L Signal level				
23	K2	none LEVELO				
24	V2	KO LEVEL1				
24	K3	KO,K1 LEVEL2				
		K0,K1,K2 LEVEL3				
		K0,K1,K2,K3   LEVEL4				
25	PLL	Connect to the terminal CE of PLL IC (LM7001 Q107).				
26	CL	Connect to the terminal CL of PLL IC, terminal CL of analogue				
		switches(Q307,308, Q309,Q601,Q692),terminal SECK of digital				
		delay (Q661) and terminal CLK of electro volume. (Q451)				
27	DATA	Connect to the terminal DATA of PLL IC, terminal DI of analogue				
2. 2		switches, terminal SEDATA of digital delay, terminal SIN of				
		extended IC and terminal CLK of electro volume. (Q451)				

#### FM band setting

BAND1	BAND0	REGION	FREQUENCY RANGE	CH. SPACE
0	0	U.S.A.	87.5-108.0MHz	50kHz
0	1	Europe	87.50-108.00MHz	50kHz
1	0	Saudi Arabia	87.50-108.00MHz	50kHz
1	1	Japan	76.0-90.0MHz	100kHz

#### AM band setting

This band setting					
AM10K	REGION	FREQUENCY RANGE	CH. SPACE		
1	U.S.A.	530-1710kHz	10kHz		
0	Saudi Arabia	531-1602kHz	9kHz		
0	Europe	522-1611kHz	9kHz		

Pin No.	Symbol	Description			
28	CE	Connect to the terminal CE of analogue switches and terminal			
		CE of electro volume.			
29	LED	LED indicator control output terminal.			
30	X1	Ceramic oscillator connection terminal for main system clock.			
31	X2	Connect to the 4.19MHz ceramic oscillator.			
32	VSS	Ground terminal.			
33	XT1	Ceramic oscillator connection terminal for sub system clock.			
34	XT2	Not used.			
35	INP MUT	Audio muting output terminal when input selector change over.			
36	SIM MUT	SIM muting output terminal when input selector change over.			
37	TU MUT	Tuncr muting output terminal."H" when active.			
38	REQ/MODE	Connect to the terminal REQ of digital delay.			
39	RESET	Reset input terminal."L"when active.			
40	D1				
41	D2				
42	D3				
43	D4	]			
44	D5	Digit output terminals."H" when active.			
45	D6				
46	D7				
47	D8				
48	D9				
49	D10				
50	D11				
51	So				
52	Sr				
53	Sp	Segment output terminals."H" when active.			
54	Sn	_			
55	Sm				
56	VLOAD	Pull-down resistor connection terminal of FIP controller/driver.			
57	VPRE	Power supply terminal of output buffer of FIP controller/driver.			
58	Sk				
59	Sj				
60	Sh	Segment and key scan output terminals.			
61	Sg	"H" when active.			
62	Sf				
63	Se				
64	VDD	Power supply terminal.(+5V)			

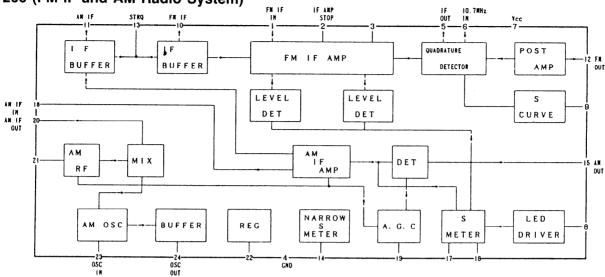
# Key Matrix

	No.	24	23	22	21
No.		K3	K2	K1	K0
4	Sa	SLEEP	SPEAKER REMOTE	SPEAKER MAIN	POWER
3	Sb	DELAY TIME	SURROUND MODE	CENTER MODE	MR
2	Sc	TAPE-2	TAPE-1	VIDEO-2	VIDEO-1
1	Sd	CD	PHONO	AM	FM
63	Se		S.DIRECT	SIM	REC OUT
62	Sf	4	3	2	1
61	Sg	8	7	6	5
60	Sh	CLASS SCAN	D.TUNING	0	9
59	Sj	UP	DOWN	MEMORY	MUTE/MODE
58	Sk	CLASS-D	CLASS-C	CLASS-B	CLASS-A
55	Sm	CENTER OFF	SELECTIVE TONE	CLASS-F	CLASS-E

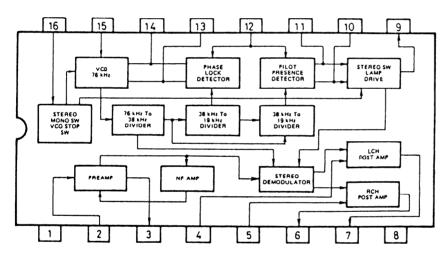
# IC BLOCK DIAGRAMS AND DESCRIPTIONS

Q104





Q201 AN7470 (FM Stereo Decoder)



Q251 **BA7625 (Video Selector Switch)** 

OUT [	•	16 IN I
GND 2	6dB	15 CTL A
IN 5 3	la l	14 V OUT 1
GND 4		13 Vcc
IN 4 5	6dB	12 IN 2
CTL E		IICTL B
IN 3 7		10 V OUT 2
CTL D8		9CTL C

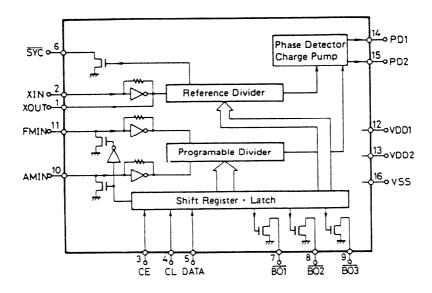
#15	#11	#6	#1
Α	В	Е	MONITOR OUT
L	L	Х	INI
Н	L	Х	IN2
L	Н	Х	IN3
Н	Н	L	IN4
Н	Н	Н	IN5

v.	Don't	care

#9	#8	#6	#14
С	D	Е	VOUT 1
L	L	Х	
Н	L	Х	IN2
L	Н	Х	IN3
Н	Н	L	IN4
Н	Н	Н	IN5

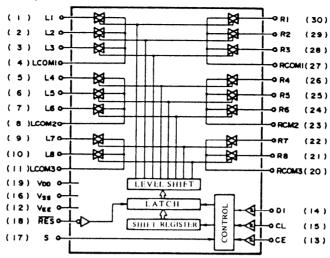
#15	#11	#6	#10
Α	В	Е	VOUT 2
L	L	Х	IN1
Н	L	Х	
L	Н	Х	IN3
Н	H	L	IN4
Н	Н	H	IN5

Q107 LM7001 (PLL Synthesizer and Controller)



Pin No.	Terminal	Description
1	XOUT	Connect to the 7.2 MHz equatel oscillator
2	XIN	Connect to the 7.2 MHz crystal oscillator.
3	CE	Chip enable terminal. Connect to the PLL terminal of microprocessor.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor.
6	SYN	Not used.
7	AUTO/MONO	AUTO/MONO selection output terminal. "L" when AUTO.
8	FM	FM band control output terminal. "L" when FM.
9	ĀM	AM band control output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD 1	Power supply terminal for back-up.
13	VDD2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	Vss	Ground terminal.

## Q307, Q692 LC7822N (Analogue switch)



## Q307

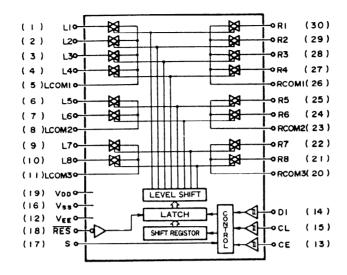
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	PHONO'		16	Vss	Ground terminal.
2	CD'		17	S	Selector terminal
3	TAPE-1		18	RES	Reset terminal. When power is turned
4	L COM 1	Input/output terminals of audio signal		1	on,the condition of the analog switch
5	TAPE-1	of left channel.			is not detrmined, but when this
6	CD	Control to the inside analogue switch			terminal iS "L",all analog switches
7	PHONO	at the serial data.			are off.
8	L COM 2		19	VDD	Power supply terminal.(+15V)
9	SOURCE		20	R COM 3	
10	TAPE-2		21	TAPE-2	
11	L COM 3		22	SOURCE	
12	Vss	Negative power supply terminal.	23	R COM 2	Input/output terminals of audio signal
	<u> </u>	(-15V)	24	PHONO	of right channel.
13	CE	Chip enable terminal.Connect the terminal	25	CD	Control to the inside analogue switch
		SEL of microprocessor.	26	TAPE-1	at the serial data.
14	DI	Serial data input terminal.Connect the	27	R COM 1	
		terminal DATA of microprocessor.	28	TAPE-1'	
15	CL	Serial clock input terminal.Connect the	29	CD'	
		terminal CLOCK of microprocessor.	30	PHONO'	

## Q692

4001					
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY	Input/output terminals of audio signal	16	Vss	Ground terminal.
2	HALL	of right channel when surround mode.	17	S	Selector terminal
3	SIM	Control the inside analogue switch	18	RES	Reset terminal. When power is turned
4	L COM 1	at the serial data.			on, the condition of the analog switch
5	TEST	Not used.			is not detrmined, but when this
6	TEST B		ļ		terminal iS "L",all analog switches
7	TEST A		<u> </u>		are off.
8	L COM 2		19	VDD	Power supply terminal.(+15V)
9	SIM	Input/output terminals of audio signal	20	R COM 3	Input/output terminals of audio signal
10	SIM	of centert channel when mode SIM.	21	SIM	of right channel when mode SIM.
11	L COM 3		22	SIM	_
12	Vss	Negative power supply terminal.	23	R COM 2	Dolby pro logic control signal.
		(-15V)	24	TEST A	Control the inside analogue switch
13	CE	Chip enable terminal.Connect the terminal	25	TEST B	at the serial data.
	Į	SEL of microprocessor.	26	TEST	
14	DI	Serial data input terminal.Connect the	27	R COM 1	Input/output terminals of audio signal
		terminal DATA of microprocessor.	28	SIM	of left channel when surround mode.
15	CL	Serial clock input terminal.Connect the	29	HALL	Control to the inside analogue switch
	1	terminal CLOCK of microprocessor.	30	DOLBY	at the serial data.



# Q308 LC7821N (Analogue switch)



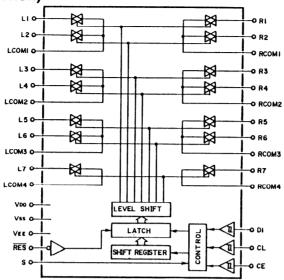
#### Q308

4000					· · · · · · · · · · · · · · · · · · ·
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	TAPE-2'		16	Vss	Ground terminal.
2	TUNER'		17	S	Selector terminal
3	VIDEO-1'		18	RES	Reset terminal. When power is turned
4	VIDEO-2'	Input/output terminals of audio signal			on, the condition of the analog switch
5	L COM 1	of right channel.		ł	is not detrmined, but when this
6	VIDEO-2	Control to the inside analogue switch			terminal iS "L", all analog switches
7	VIDEO-1	at the serial data.			are off.
8	L COM 2		19	VDD	Power supply terminal.(+15V)
9	TUNER		20	L COM 3	
10	OFF		21	OFF	
11	L COM 3		22	TUNER	
12	Vss	Negative power supply terminal.	23	L COM 2	Input/output terminals of audio signal
		(-15V)	24	VIDEO-1	of left channel.
13	CE	Chip enable terminal.Connect the terminal	25	VIDEO-2	Control to the inside analogue switch
		SFL of microprocessor.	26	L COM 1	at the serial data.
14	DI	Serial data input terminal.Connect the	27	VIDEO-2'	
		terminal DATA of microprocessor.	28	VIDEO-1'	
15	CL	Serial clock input terminal.Connect the	29	TUNER'	
		terminal CLOCK of microprocessor.	30	TAPE-2'	

Serial Data Composition

Scriai.	Data	<u> </u>	10031	uon				,					
	Α0	<b>A</b> 1	A2	<b>A</b> 3	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	
	Α	ddre	SS		Swi	tch change	over						
Q306	0	1	0	1	TAPE-2'	TUNER'	VIDEO-1'	VIDEO-2'	VIDEO-2	VIDEO-1	TUNER		
Q307	0	0	1	1	PHONO'	CD'	TAPE-1'	TAPE-1	CD	PHONO	SOURCE	TAPE-2	
Q309	0	1	1	1	TAPE-1	VIDEO-2	SIM	SIM	DIRECT		DIRECT		
Q691	1	1	1	1	DOLBY	DOLBY	DOLBY	HALL	NORMAL	WIDE	CENTER OFF		TX-906
Q692	1	0	1	1	DOLBY	HALL	SIM	TEST	TESTA	TESTB	SIM	SIM	TX-906

# Q309, Q691 LC7823N (Analogue switch)



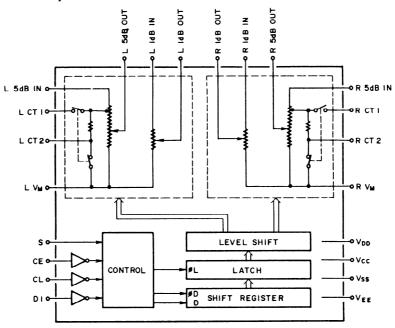
## Q309

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1		Recording output terminals.Control the	16	Vss	Ground terminal.
2	VIDEO-2 OUT	analogue switch at the serial data.	17	S	Selector terminal
3	L COM 1		18	RES	Reset terminal. When power is turned
4	SIM				on,the condition of the analog switch
5	SIM				is not detrmined, but when this
6	L COM 2	Input/output terminals of audio signal	1		terminal iS "L",all analog switches
7	DIRECT	of left channel when surround mode.			are off.
8	NC	Control the inside analogue switch	19	VDD	Power supply terminal.(+15V)
9	L COM 3	at the serial data.	20	R COM 4	
10	DIRECT		21	RIRECT	
11	L COM 4		22	R COM 3	
12	Vss	Negative power supply terminal.	23	NC	Input/output terminals of audio signal
		(-15V)	24	DIRECT	of right channel when surround mode.
13	CE	Chip enable terminal.Connect the terminal	25	R COM 2	Control to the inside analogue switch
		SEL of microprocessor.	26	SIM	at the serial data.
14	DI	Serial data input terminal.Connect the	27	SIM	
		terminal DATA of microprocessor.	28	R COM 1	Recording output terminals. Control the
15	CL	Serial clock input terminal.Connect the	29	VIDEO-2 OUT	analogue switch at the serial data.
		terminal CLOCK of microprocessor.	30	TAPE-1 REC	

### Q691

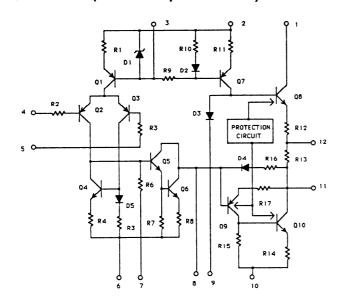
Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY		16	Vss	Ground terminal.
2	DOLBY		17	S	Selector terminal
3	L COM 1		18	RES	Reset terminal. When power is turned
4	DOLBY	Input/output terminals of audio signal			on, the condition of the analog switch
5	HALL	of left channel when surround mode.			is not detrmined, but when this
6	L COM 2	Control the inside analogue switch			terminal iS "L",all analog switches
7	NORMAL	at the serial data.			are off.
8	WIDE		19	VDD	Power supply terminal.(+15V)
9	L COM 3		20	R COM 4	
10	C. OFF		21	C. OFF	
11	L COM 4		22	R COM 3	
12	Vss	Negative power supply terminal.	23	WIDE	Input/output terminals of audio signal
		(-15V)	24	NORMAL	of right channel when surround mode.
13	CE	Chip enable terminal.Connect the terminal	25	R COM 2	Control to the inside analogue switch
		SEL of microprocessor.	26	HALL	at the serial data.
14	DI	Serial data input terminal.Connect the	27	DOLBY	
		terminal DATA of microprocessor.	28	R COM 1	
15	CL	Serial clock input terminal.Connect the	29	DOLBY	
		terminal CLOCK of microprocessor.	30	DOLBY	

Q451 LC7536 (Electro Volume)



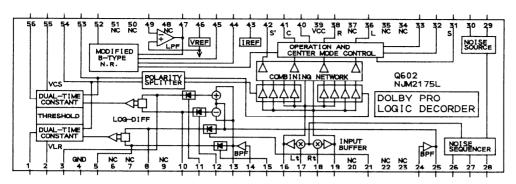
No.	TERMINAL	DESCRIPTION	No.	TERMINAL	DESCRIPTION
1	L 5dB IN	5dB step attenuator input terminal	17	CL	Serial data input terminal
3	L CT1	Terminal for loudness	18	DI	Serial data input terminal
4	L CT2	Terminal for loudness	19	CE	Serial data input terminal
5	L 5dB OUT	5dB step attenuator output terminal	21	VCC	Power supply terminal
6	L 1dB IN	1dB step attenuator input terminal	22	R VM	Common terminal of volume
8	L 1dB OUT	1dB step attenuator output terminal	23	R 1dB OUT	1dB step attenuator output terminal
9	L VM	Common terminal of volume	25	R 1dB IN	1dB step attenuator input terminal
10	VEE	Power supply terminal	26	R 5dB OUT	5dB step attenuator output terminal
12	S	Select terminal of address code during data format	27	R CT2	Terminal for loudness
13	VDD	Power supply terminal	28	R CT1	Terminal for loudness
14	VSS	Power supply terminal	30	R 5dB IN	5dB step attenuator input terminal

# Q501, Q502 $\mu$ PC1298V (Power Amplifier Driver)

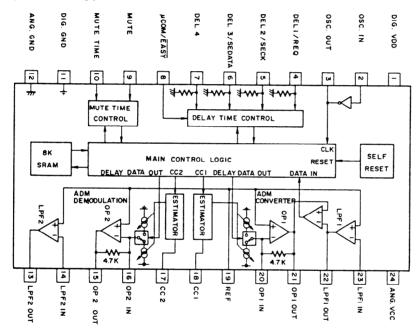




#### Q602 NJM2175L (Dolby Pro Logic Decoder)



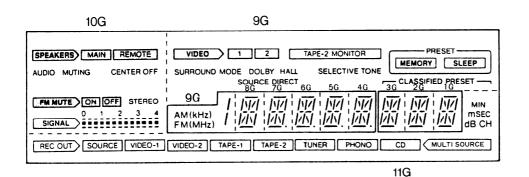
## Q661 M50198P (Digital Delay)

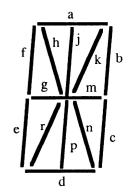


Pin no.	Symbol	Function
1	DIG GND	Power supply terminal of digital section
2	OSC. IN	Connect the 3.27MHz ceramic oscillator or external clock.
3	OSC. OUT	
4	DEL1/REQ	Terminal DEL1 when the easy mode. Terminal REQ when the microprocessor.
5	DEL2/SECK	Terminal DEL2 when the easy mode. Terminal SECK when the microprocessor.
6	DEL3/SEDATA	Terminal DEL3 when the easy mode. Terminal SEDATA when the microprocessor.
7	DEL4	80usec. mode control terminal.
8	COM/EASY	Microprocessor or easy mode changeover terminal
9	MUTE	Manual muting control terminal.
10	MUTE TIME	Auto muting time changeover terminal.
11	DIG.GND	Digital ground
12	ANG.GND	Analog ground
13	LPF2 OUT	Connect the secondary low pass filter between pins 13 & 14.
14	LPF2 IN	
15	OP2 OUT	Operation amplifier output terminal
16	OP2 IN	Operation amplifier input terminal
17	CC2	Current control
18	CC1	Current control
19	REF	Reference voltage.(2.5V)
20	OP1 IN	Operation amplifier input terminal
21	OPI OUT	Operation amplifier outout terminal
22	LPF1 OUT	Connect the low pass filter between pins 22 and 23.
23	LPF1 IN	
24	ANG.VCC	Power supply terminal of analog section.



# Q701 11-BT-107GK (Fluorescent Indicator Tube)





PIN NO.	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26
CONNECTION	F2	F2	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	NC	NP	NP	NP	NP	NP	NP
PIN NO.	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
CONNECTION	NP	NP	NP	NP	NP	NC	NC	NC	NC	NC	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1	

	<del></del>	·	<del></del>	·					<sub>1</sub>		
	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
Pl	d₿	AUDIO MUTING	TAPE-2 MONITOR	d	d	d	d	d	d	d	d
P2	CH	REMOTE	2	С	С	С	С	С	С	С	С
P3	mSEC	MIAM	1	b	b	b	b	b	b	b	b
P4	MIIM	SPEAKERS	VIDEO	a	a	a	a	a	a	a	a
P5	MULTI SOURCE	CENTER OFF	SURROUND MODE	e	e	е	e	e	e	e	e
P6	Frame of CD	FM MUTE	DOLBY	f	f	f	f	f	f	f	f
P7	Frame of PHONO	OM	HALL	g	g	g	g	g	g	g	g
P8	Frame of TUNER	OFF	SELECTIVE TONE	h	h	h	h	h	h	h	h
P9	Frame of TAPE2	STEREO	SOURCE DIRECT	j	j	j	j	j	j	j	j
P10	Frame of TAPE1	S2	MEMORY	k	k	k	k	k	k	k	k
P11	Frame of VIDEO2	B1	SLEEP	m	m	m	m	m	m	m	m
P12	Frame of VIDEO1	B2	S1	n	n	n	n	n	n	n	n
P13	Frame of SOURCE	В3	AM(kHz)	р	р	р	р	р	р	р	р
P14	REC OUT	B4	FM(MHz)	r	r	r	r	r	r	r	r
P15	<b>S</b> 3			_	0	0	0	0	-	-	-

# Q703 $\mu$ PD17103CX-531 (Remote Control Decoder)

PH SENS

POWER

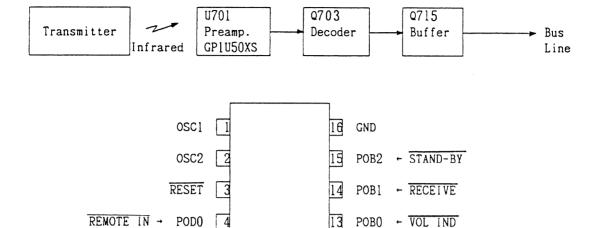
SYS IN

→ POD1

→ POD2

→ POD3

VDD



12 POC3 ← VOL UP

POC2 - VOL DOWN

POC1 - PLAYER

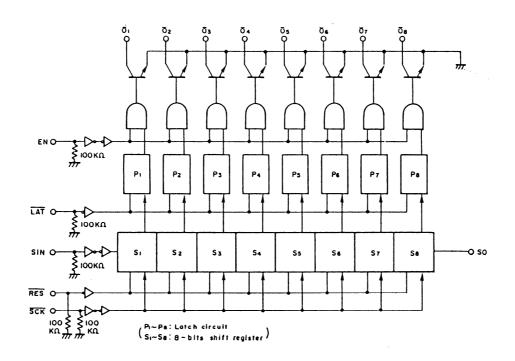
9 POCO - SYS OUT

Pin No.	Symbol	Terminal	Description
1	OSC1	OSC	Connect to the 8.00MHz ceramic oscillator.
2	OSC2		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp, for remote control. Active low.
5	POD1	PHONO SENES	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V <sub>DD</sub>	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PLAYER	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse ( TTTT = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being recieved.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V <sub>ss</sub>	GND	Ground terminal.

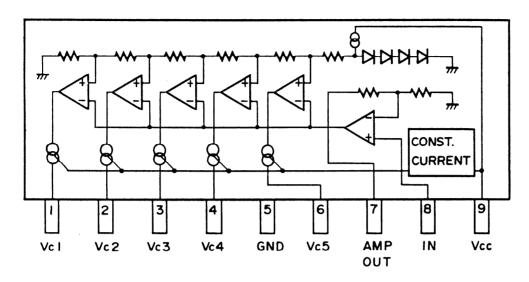
# Q705, Q851 μPD6345C (Extended IC)

	ſ	]	
vss 1		16	<b>V</b> DD
EN 2		15	RES
LAT 3		14	SCK
SO 4		13	SIN
08 5		12	01
07 6		11	02
06 7		10	03
05 8		9	04
	l	l	

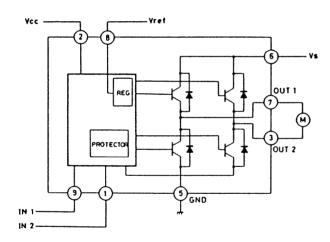
	Τ	logos	Tones				
	<del> </del>	Q705	Q851				
		Description Description					
1	Vss	Ground terminal.					
2	EN		p enable input terminal. Connect to the terminal EN				
	<b></b>	of the microprocessor. Active H.	e microprocessor. Active H.				
3	LAT	Latch input terminal.Connect to the to	erminal LAT				
		of the microprocessor.					
4	so	Serial data output terminal.					
5	O8	NR OFF indicator output terminal.	Headphone relay control output				
		Active low.	terminal.Active low.				
6	07	NR ON indicator output terminal.	Rear speaker relay control output				
		Active low.	terminal.Active low.				
7	06	HB OFF indicator output terminal.	Remote speaker relay control output				
•		Active low. terminal.Active low.					
8 05		HB ON indicator output terminal.	Main speaker relay control output				
		Active low.	terminal.Active low.				
9	04	LOCAL indicator output terminal.	Center preout muting control output				
		Active low.	terminal.Active low.				
10	O3	DX indicator output terminal.	Not used.				
		Active low.					
11	O2	AUTO indicator output terminal.	Video selector switch control				
		Active low.	output terminal.				
12	01	MONO indicator output terminal.	Video selector switch control				
		Active low.	output terminal.				
13	SIN	Serial data input terminal.Connect to					
		of the microprocessor.					
14	SCK	Serial clock input terminal.Connect to the terminal CLOCK					
		of the microprocessor.					
15	RESET	Reset input terminal. Active L.					
16	VDD	Power supply terminal.					
	1.00	1. O O. Suppry torritains.					



Q706 BA6125 (Signal meter driver)



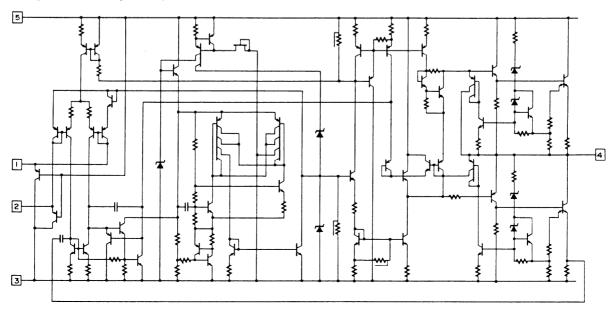
Q871 TA7291S (Volume driver)

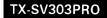


INP	INPUT		PUT	W005
IN 1	IN 2	OUTI	OUT 2	MODE
0	0	œ	<b>∞</b>	STOP
1	0	н	L	cw/ccw
0	1	L	н	ccw/cw
1	1	L	L	BRAKE

CCW: Counter clockwise direction CW: Clockwise direction

Q571, Q572 SI-18751 (Power amplifier)





# **ADJUSTMENT PROCEDURES**

#### • Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/μV FM stereo: 1kHz, 75kHz devi., 60dB/μV Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz 30% mod.

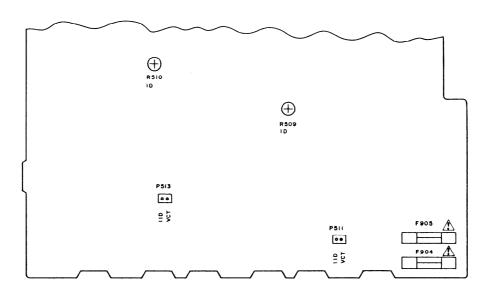
2. Outputs

Connect the non-inductive type resistors of 80hms to the main speaker, remote speaker, and rear speaker terminals unless otherwise noted.

3. Standard Knob Position

TAPE MONITOR 2 ······OFF
VOLUMEMaximum
BASS/TREBLE/BALANCE/INPUT
BALANCECenter
MUTINGOFF
REC SELECTOR······SOURCE
INPUT SELECTOR······CD
SPEAKERS ·····ON
S.T.COFF

SURROUND MODE·····OFF
CENTER MODE······WIDE
DELAY TIME······20mS
MULTI/REAR LEVEL ······Center



SELECTOR AND POWER AMPLIFIER PC BOARD

### **Amplifier section**

Idling Current Adjustment

Connect the DC voltmeter to the terminals IID and VCT on the pre., and main amplifier pc board. Adjust the semi-fixed resistors R509, and R510 so that indication of voltmeter is  $5\pm0.5$ mV.

NOTE: Adjust after switching on for 5 minutes.

#### FM section

Item	Step	Connection of instrument	FM SG output	Stereo modu- lator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
	1					DC voltmeter	L101	0±20mV	FM MUTE/MODE
IF/RF	2	Fig. 1	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)		99.1MHz	AC voltmeter	IFT on the front end	Maximum	switch: ON/STEREO Repeat the steps 1 and 3 until no further
	3					Distortion analyzer	L102	Minimum	adjustment is necessary.
vco		Fig. 2	99.1MHz 1kHz, 75kHz devi. 65dBf (60dB)		99.1MHz	Frequency counter	R201	19kHz±10Hz	
Stereo Distortion		Fig. 3	99.1MHz, Ext mod65dBf (60dB)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo 1		Fig. 3	99.1MHz Ext. modulation	Channel L 1kHz	99.1MHz	Channel R AC voltmeter		Minimum	Maximum and same
Separation	2	rig. 3	65dBf (60dB)	Channel R 1kHz	99.1IMIF12	Channel L AC voltmeter	R202	Minimum	separation.
Muting Level		Fig. 3	99.1MHz 17.2dBf(12dB)		99.1MHz	AUTO indicator	R101	Light on	
Signal Level		Fig. 3	99.1MHz 35dBf(30dB)		99.1MHz	4th Signal indicator	R102	Light on	

FM signal generator	tenna Output ter  Vnit  TP1 TP2	AC voltmete or Oscillosco	
FM signal	DC voltmeter TP4  Vnit	Distortion analyzer equency	<fig.1></fig.1>
Ext.mc	Use the h	Output(L or/a	<fig.2></fig.2>
modulator <fig< td=""><td>generator</td><td></td><td>AC voltmeter or oscilloscope</td></fig<>	generator		AC voltmeter or oscilloscope

#### AM section

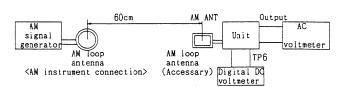
Step	AM SG output	Tuning frequency	Output indicator	Adjustment point	Adjust for
1	-	530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.2±0.1V
2	600kHz 400Hz, 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz, 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

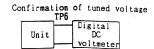
#### Reference Specifications

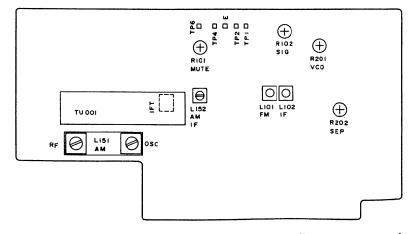
FM tuned voltage: 87.5MHz-108.00MHz  $1.6 \pm 0.4 \text{V} - 8.0 \pm 0.4 \text{V}$ 

AM tuned voltage: 530kHz 1.2±0.5V 1710kHz 7.0±0.5V

Auto stop level: AM: Less than 65dB/m FM: Less than  $16dB/\mu$ 







Tuner circuit pc board

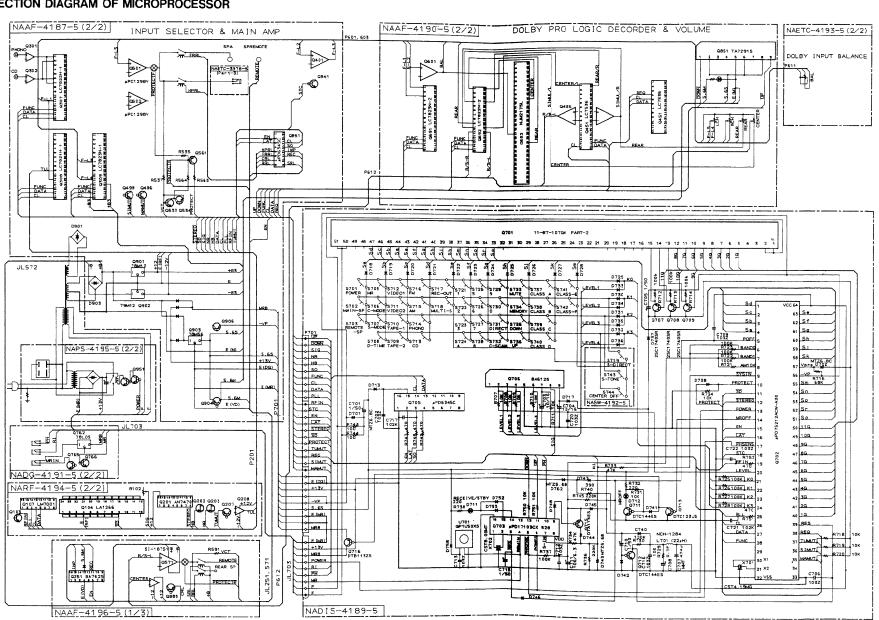
G

Α

5

В

C



D

Ε

5

o PRO

G

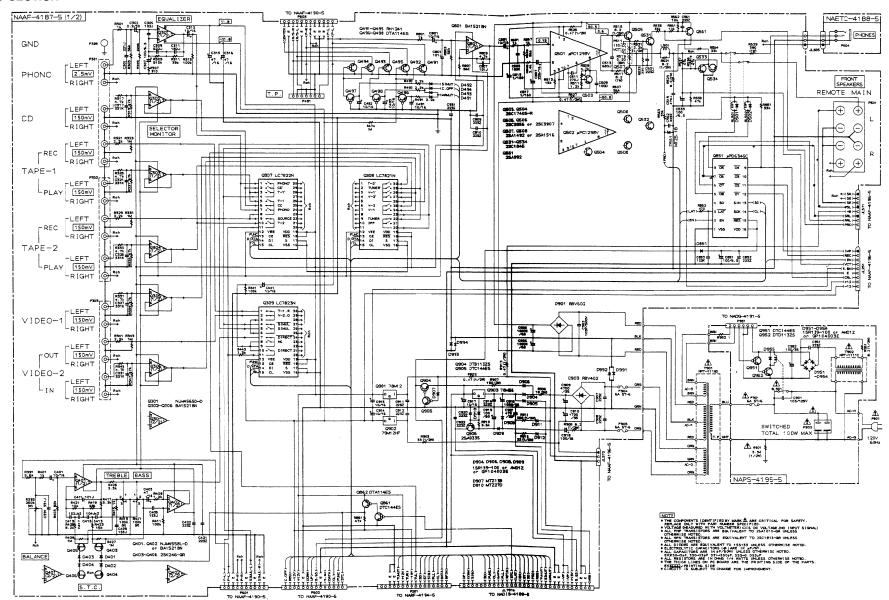
#### SCHEMATIC DIAGRAM

В

С

**AUDIO SECTION** 

Α



D

Ε

1 2 3 4 5 6 7

# SCHEMATIC DIAGRAM SURROUND SECTION

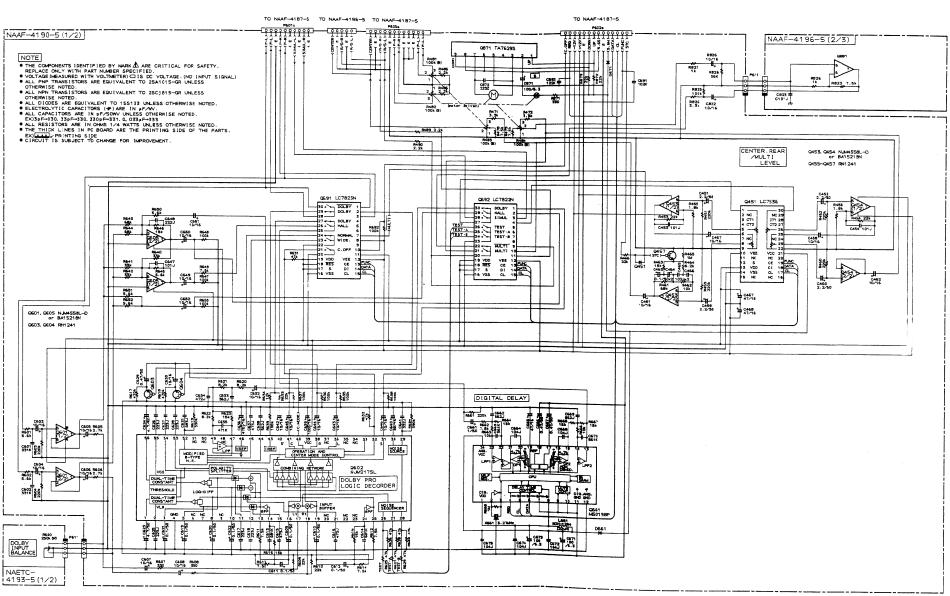
Α

В

C

D

Ε



# PRINTED CIRCUIT BOARD PARTS LIST

#### CAUTION:

Replacement for transistor of mark  $\Rightarrow$ , if necessary must be made from the same beta group (HFE) as the original type.

SELECTOR AN	ID POWER AMPLI	FIER PC BOARD (NAAF-4187-5)	CIRCUIT NO	PART NO.	DESCRIPTION
CIRCUIT NO.	PART NO.	DESCRIPTION	omoon no.	Diodes	DESCIII NON
G.1.0011 110.	ICs		D911,D912	223163 or	1SS133 or
Q301	22240191	NJM4565D-D	D911,D912 D991-D994	223205	1SS270A
Q302-Q306	22240247	BA15218N	D771-D774	Coils	13327074
Q302-Q300 Q307	22240270	LC7822N	L501,L502	231176	S-1.3C
Q308	22240280	LC7821N	L501,L502	Capacitors	<b>5</b> 1.5 <b>C</b>
Q309	22240339	LC7823N	C303,C304	354780229	2.2 μ F,50V,Elect.
Q401,Q402	22240247 or	BA15218N or	C307,C308	354780229	$100 \mu$ F,6.3V,Elect.
Q+01,Q+02	22240293	NJM4558L-D	C309,C310	374726224	6200pF±5%,50V,Plastic
Q501,Q502	22240311	μ PC1298V	C309,C310 C311,C312	374720224 374721824	1800pF±5%,50V,Plastic
Q801,Q502	22240247	BA15218N	C313,C314	354761009	$10 \mu$ F,35V,Elect.
Q851	22240211	μ PD6345C	•	354744709	·
Q901 —	222780122NEC	78M12	C315,C316		47 μ F,16V,Elect.
Q901 ————————————————————————————————————	222790125 222790125	79M12	C401,C402	354761009	10 μ F,35V,Elect.
Q902 Q903	222780565JRC	78M56	C403,C404	354744709	47 μ F,16V,Elect.
Q903	Transistors	7614150	C405,C406	374721534	$0.015 \mu \text{ F} \pm 5\%,50\text{V,Plastic}$
0402 0406	2211945	2SK246-GR	C409,C410	374721534	$0.015 \mu \text{ F} \pm 5\%,50\text{V,Plastic}$
Q403-Q406		25K240-GK RN1241-A or	C413-C416	374721044	$0.1 \mu\text{F} \pm 5\%,50\text{V},\text{Plastic}$
Q491-Q495	2213631 or		C417-C420	374721024	1000pF±5%,50V,Plastic
0406 0409	2213632	RN1241-B DTA114ES	C441,C442	354761009	10 μ F,35V,Elect.
Q496-Q498	2213510		C491-C493	354761009	10 μ F,35V,Elect.
Q503,Q504	2213284	2SC1740S-R	C501,C502	354761009	10 μ F,35V,Elect.
Q505,Q506	2201653,	☆ 2SC3856-O,	C507,C508	354742219	220 μ F,16V,Elect.
	2201654,	☆ 2SC3856-Y,	C513,C514	374726834	$0.068 \mu \text{ F} \pm 5\%,50\text{V,Plastic}$
	2201655,	☆ 2SC3856-P,	C515,C516	374724734	$0.047 \mu\text{F}\pm5\%$ ,50V,Plastic
	2202272 or	☆ 2SC3907-R or	C517-C520	354700109	$1 \mu$ F,160V,Elect.
0505 0500	2202273	☆ 2SC3907-O	C533,C851	354721019	100 μ F,6.3V,Elect.
Q507,Q508	2201663,	☆ 2SA1492-O,	C801,C802	354761009	$10 \mu$ F,35V,Elect.
	2201664,	☆ 2SA1492-Y,	C905,C906	3504245	8200 μ F,50V,Elect.
	2201665,	☆ 2SA1492-O,	C909,C910	3504213	4700 μ F,35V,Elect.
	2202262 or	☆ 2SA1516-R or	C913,C914	354761009	$10 \mu$ F,35V,Elect.
	2202263	☆ 2SA1516-O	C915	354751029	1000 μ F,25V,Elect.
Q531-Q534	2211732 or	2SC1845-F or	C917	354761009	$10 \mu$ F,35V,Elect.
	2211733	2SC1845-E	C918	354761019	$100 \mu$ F,35V,Elect.
Q561	2211792 or	2SA992-F or	C919	354781019	$100 \mu$ F,50V,Elect.
	2211793	2SA992-E	C921	354754719	$470 \mu$ F,25V,Elect.
Q861,Q905	221282	DTC144ES		Resistors	
Q862	2213510	DTA114ES	R393	5104225	N11RGLC250KWT22Z,Variable,Balance
Q904	2213830	DTB113ZS	R407,R408	5104230	N14RLC100KWT22Z, Variable, Bass
Q906	2213354	2SA933S-R	R413,R414	5104230	N14RLC100KWT22Z,Variable,Treble
	Diodes		R509,R510	5210261	N06HR 5KBC,Semi-fixed
D401-D404	223163 or	1SS133 or	R515,R516	442520824	$8.2 \Omega \pm 5\%$ ,1/2W,Metal oxide film
D491-D494	223205	1SS270A	R517,R518	441620824	$8.2\Omega\pm5\%$ ,1W,Metal oxide film
D501,D502	223163 or	1SS133 or	R519,R520	4500031	0.22 Ω,5W,Metal plate
D851,D905	223205	1SS270A	R521,R522	442520824	$8.2 \Omega \pm 5\%$ ,1/2W,Metal oxide film
D561	224450512	MTZ5.1B	R523,R524	441620824	$8.2\Omega\pm5\%$ ,1W,Metal oxide film
D901	22380038	RBV602	R525-R528	442524794	$0.47 \Omega \pm 5\%, 1/2$ W, Metal oxide film
D903	22380048	RBA402	R529,R530	441623914	$390\Omega \pm 5\%$ ,1W,Metal oxide film
D904,D906	22380032,	1SR139-100,	R531,R532	442522224	$2.2k\Omega\pm5\%,1/2W,Metal$ oxide film
D908,D909	22380035 or	GP104003E or	R902	441524794	$0.47\Omega\pm5\%$ ,1/2W,Metal oxide film
	22380046	AM01Z	R903	442523304	$33\Omega\pm5\%$ ,1/2W,Metal oxide film
D907	224451302	MTZ13B	R906	441721804	$18\Omega\pm5\%$ ,2W,Metal oxide film
D910	224452704	MTD27D	R907	441721514	$150\Omega\pm5\%$ ,2W,Metal oxide film

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CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors			Diodes	
R908	442524704	$47 \Omega \pm 5\%$ ,1/2W,Metal oxide film	D740-D742	223163 or	1SS133 or
R911	442523314	$330 \Omega \pm 5\%, 1/2W, Metal oxide film$	D744-D748	223205	1SS270A
R912	442522204	$22 \Omega \pm 5\%, 1/2W, Metal oxide film$	D743,D762	224450562	MTZ5.6B
R913	442524794	$0.47\Omega\pm5\%$ ,1/2W,Metal oxide film	D752-D754	223163 or	1SS133 or
	Relaies		D758	223205	1SS270A
RL501	25065396	NRL-2P1.25A-DC24-067		L.E.Ds	
RL502	25065339	NRL-2P5A-DC24-046	D711,D712	225142	SEL2913K
	Terminals			Coil	
P301-P303	25045300	NPJ-6PDBL159	L701	233411K220	NCH-1387
P501	25060159	NTM-8PDMN085		Ceramic oscillators	i
	Plugs		X701	3010163	CST4.19MGW
P201	25055502	NPLG-16P477	X702	3010154 or	CST8.00MT or
P491	25055583	NPLG-7P554		3010190	CST8.00MTW
P511,P512	25055493	NPLG-2P468		Capacitors	
P601	25055499	NPLG-10P474	C701	353780109	$1 \mu$ F,50V,Elect.
P602	25055501	NPLG-14P476	C703,C704	353741009	$10 \mu$ F,16V,Elect.
P603	25055500	NPLG-12P475	C705	353780109	$1 \mu$ F,50V,Elect.
	Socket		C707	375524744	$0.47 \mu$ F $\pm$ 5%,50V,Plastic
JL701a	25050727	NSCT-30P531	C708	3000057	0.1F,5.5V,Super
	Fuses		C710	353780109	$1 \mu$ F,50V,Elect.
F904,F905	252051	<b>⚠</b> 6A ST-6	C711	353721019	$100 \mu$ F,6.3V,Elect.
	Fuseholders		C715	353780109	$1 \mu$ F,50V,Elect.
F904a,F905a	250113	<b>⚠</b> SN5051		Switches	
	Clamp		S701-S703	25035548	NPS-111-S510
P991	260224	CP-1S	S705-S718	25035548	NPS-111-S510
			S721-S742	25035548	NPS-111-S510
HEADPHONE	TERMINAL PC BC	OARD (NAETC-4188-5)		Socket	
CIRCUIT NO.	PART NO.	DESCRIPTION	JL701b	25050728	NSCT-30P532
P504	25045255	YKB21-5009, Terminal, headphone		Plug	
			P702b	25055512	NPLG-5P487
	CUIT PC BOARD (			Holders	
CIRCUIT NO.	PART NO.	DESCRIPTION	Q702a	27190842	LED 9
	ICs		D711a	27190843	LED 1
Q702	22240624	μ PD75212ACW-A30			
Q703	22240466	μ PD17103CX-531	VOLUME CIR	CUIT PC BOARD(N	AAF-4190-5)
Q705	22240211	μ PD6345C	CIRCUIT NO.	PART NO.	DESCRIPTION
Q706	22240341	BA6125		ICs	
	FL tube		Q451	22240468	LC7536
Q701	212115	11-BT-107GK	Q453,Q454	22240247 or	BA15218N or
	Transistors		Q601,Q605	22240293	NJM4558L-D
Q707-Q709	2213284	2SC1740S-R	Q602	22240458	NJM2175L
Q711,Q712	221282	DTC144ES	Q661	22240370	M50198P
Q713	2213640	DTC123JS	Q691	22240339	LC7823N
Q715	2213510	DTA114ES	Q692	22240270	LC7822N
Q716	2213830	DTB113ZS	Q871	22240239	TA7291S
	Opto. receiving m			Transistors	
U701	24130007	GP1U571X	Q457,Q603	2213631 or	RN1241-A or
	Diodes		Q604	2213632	RN1241-B
D701,D702	224450623	MTZ6.2C		Diodes	
D713,D714	223163 or	1SS133 or	D451,D661	223163 or	1SS133 or
D717-D738	223205	1SS270A	D662,D871	223205	1SS270A

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Ceamin collision   Color   Color	CIRCUIT NO.	PART NO.	DESCRIPTION	RI/MR TERMII	NAL PC BOARD (NA	ADG-4191-5)
L661         Coll         Corporations         Q764-Q766         22282 22         75C144ES           C451, C452         5478029         2.2 μ F,50V,Elect.         F064-Q766         221282         75C144ES           C451, C452         5478029         2.2 μ F,50V,Elect.         D764,D765         22316 or S1533 or S2370A           C459, C460         54376109         10 μ F,53V,Elect.         D764,D765         232305         155270A           C463, C462         354761090         10 μ F,53V,Elect.         C767         34742104         4700pE F,55x,50V,Plastic           C463, C463         354741090         47 μ F,16V,Elect.         P761         25045172         H51-1003-01-020           C463, C466         354741090         47 μ F,16V,Elect.         P762         25045172         H51-1003-01-020           C693-C612         354781099         0.1 μ F,55V,Elect.         P762         25045129         H51-1003-01-020           C615-C612         354781099         0.1 μ F,55V,Elect.         P762         25050-449         NSCT-6P268           C617-C618         354782199         0.2 μ F,55V,Elect.         P762         25050-449         NSCT-6P268           C617-C618         354782199         0.2 μ F,55V,Elect.         P762         25050-449         NSCT-6P268 <td></td> <td>Ceramic oscillator</td> <td></td> <td></td> <td></td> <td></td>		Ceramic oscillator				
L661         Coll         Corporations         Q764-Q766         22282 22         75C144ES           C451, C452         5478029         2.2 μ F,50V,Elect.         F064-Q766         221282         75C144ES           C451, C452         5478029         2.2 μ F,50V,Elect.         D764,D765         22316 or S1533 or S2370A           C459, C460         54376109         10 μ F,53V,Elect.         D764,D765         232305         155270A           C463, C462         354761090         10 μ F,53V,Elect.         C767         34742104         4700pE F,55x,50V,Plastic           C463, C463         354741090         47 μ F,16V,Elect.         P761         25045172         H51-1003-01-020           C463, C466         354741090         47 μ F,16V,Elect.         P762         25045172         H51-1003-01-020           C693-C612         354781099         0.1 μ F,55V,Elect.         P762         25045129         H51-1003-01-020           C615-C612         354781099         0.1 μ F,55V,Elect.         P762         25050-449         NSCT-6P268           C617-C618         354782199         0.2 μ F,55V,Elect.         P762         25050-449         NSCT-6P268           C617-C618         354782199         0.2 μ F,55V,Elect.         P762         25050-449         NSCT-6P268 <td>X661</td> <td>3010169</td> <td>CST3.27MGW002</td> <td></td> <td>IC</td> <td></td>	X661	3010169	CST3.27MGW002		IC	
L61         23411 K220         NCI 1387         Transistors           C451,C452         354780299         2 μ P.SOV.Elect.         D764-Q766         D10des           C457,C453         354780299         2 μ P.SOV.Elect.         D764,D762         2210 do or         ISS 33 or           C459,C460         354780290         10 μ P.SSY.Elect.         D764,D765         222,009         185270A           C461,C462         354781099         10 μ P.SSY.Elect.         C76         354761099         10 μ P.SSY.Elect.           C463,C464         37472104         1000p± 5%.50V.Plastic         C770         37424724         4700p± 5%.50V.Plastic           C603-C680         334741099         10 μ P.SSY.Elect.         P761         25045129         HSI-1003-01-020           C615-C618         374724734         0.02 μ ± SSV.Elect.         P762         25045129         HSI-1003-01-022           C615-C618         374724734         0.02 μ ± SSV.Elect.         P791         25050448         NSCT-6968           C615-C6219         354781099         10 μ ± SSV.Elect.         C710 CSV.Elect.         PSF1         NSCT-6968           C630-C632         35478109         10 μ ± SSV.Elect.         C710 CSV.Elect.         PSF2         25050458         NPS-111-SS10,Soviches				O762		78L05
Capacitors         Capacitors         Cy64-Q766         21,282         DTC144ES         DTC144ES           C451,C452         354761009         10 μ F,55V,Elect.         D761,D762         23163 or         1SS133 or           C457,C458         354761009         10 μ F,55V,Elect.         Capacitors         Capacitors           C463,C464         354781099         0.1 μ F,50V,Elect.         C770         34761009         10 μ F,55V,Plastic           C463,C468         354781099         0.1 μ F,50V,Elect.         C770         34761009         10 μ F,55V,Plastic           C467,C468         354781099         0.1 μ F,50V,Elect.         P761         25945293         HSI-1003-01-020           C609-C612         354781099         0.1 μ F,50V,Elect.         P762         25945293         HSI-1003-01-020           C617,C618         347721734         0.04 μ F,50V,Elect.         P51a         2500444         NSCT-6P268           C617,C618         343782099         0.1 μ F,50V,Elect.         P51a         2500444         NSCT-6P268           C623,C624         354781099         0.1 μ F,50V,Elect.         C91CUT NO, PAT NO.         P62CRIPTION           C635,C629         353782099         0.2 μ F,50V,Elect.         C91CUT NO, PAT NO.         D62CRIPTION           C635,C64	L661		NCH-1387		Transistors	
C451 C452         354780299         2.p. F.50V. Elect.         Diodes           C457,C458         354780299         2.p. F.50V. Elect.         D764,D765         223305         1SS270A           C459,C460         354780299         2.p. F.50V. Elect.         D764,D765         223305         1SS270A           C463,C464         354781099         0.1 p. F.50V. Elect.         C767         35476109         10 μ. F.50V. Elect.         Terminals           C603-C608         354761099         0.1 p. F.50V. Elect.         PF62         25045172         HSI-1003-01-020           C603-C612         354781099         0.1 p. F.50V. Elect.         PF62         25045172         HSI-1003-01-012           C617,C618         374722234         0.022 p. F.50V. Elect.         PF62         25045293         HSI-1003-01-012           C617,C618         374722234         0.022 p. F.50V. Elect.         PF62         2504444         NSCT-6P268           C619-C622         354781099         0.1 p. F.50V. Elect.         OPERATION.         NSCT-6P268           C631-G639         354781099         0.1 p. F.50V. Elect.         S719,S743         2503548         NP5-11-S510,Switche           C632-G629         354761009         0.6 p. F.50V. Elect.         S719,S743         2503548         NP5-11-S510,Switch				O764-O766	221282	DTC144ES
C457_C458         354761009         10 μ F,35V,Elect.         D764_D765         22316 or 232305         185270A           C459,C460         3547810299         2.2 μ F,50V,Elect.         TO         Capacitors         10 μ F,35V,Elect.         Capacitors           C463,C464         354781099         0.1 μ F,50V,Elect.         C770         354761009         10 μ F,35V,Elect.         C770         34761009         10 μ F,35V,Elect.         C760-C612         354781099         0.1 μ F,50V,Elect.         P762         25045293         HS1-1003-01-020         C617,C618         347127234         0.047 μ F F.59V,Elect.         P51a         25055444         NSCT-69268         NSCT-69268         C617-6622         354781099         0.1 μ F,50V,Elect.         C619 C622         353781099         0.1 μ F,50V,Elect.         C76000000000000000000000000000000000000	C451.C452	-	2.2 µ F.50V.Elect.			
C459C4640         345781229         2.p. F.50V. Ricct.         D764.D765         22305         ISS270A           C461.C462         354781099         1.0 μ. F.35V. Fleet.         C767         354761099         1.0 μ. F.35V. Elect.           C463.C464         334731099         1.0 μ. F.35V. Fleet.         C767         37472474         470p. Fl.5V. Elect.           C467.C468         334741099         1.0 μ. F.55V. Elect.         P761         25045172         HS1-1003-01-020           C603-C608         334761099         0.1 μ. F.55V. Elect.         P762         25045293         HS1-1003-01-020           C617.C618         374722214         0.022 μ. F.55V. SDV. Plastic         P762         25045293         HS1-1003-01-012           C617.C618         374722214         0.022 μ. F.50V. Plastic         P591a         2506444         NSCT-6P268           C617.C618         334781099         4.7 μ. F.50V. Elect.         OPERATION SWITCH PC BOADED. NASW-4192-5           C623-C629         3354781099         0.2 μ. F.50V. Elect.         S719, S734         25035548         NPS-111-S510, Switche           C631         354761099         1.0 μ. F.50V. Elect.         S719, S74         25035548         NPS-111-S510, Switche           C639         35472219         470 μ. F.55V. Elect.         P702			· ·	D761.D762	223163 or	1SS133 or
C461_C462         354761099         10 μ F_SSV.Elect.         C767         354761009         10 μ F_SSV.Elect.           C463_C466         374721024         1000pF±5%,50V.Plastic         C770         374724724         4700pF±5%,50V.Plastic           C467_C468         354744709         47 μ F_16V.Elect.         776         25045172         HSJ-1003-01-020           C693-C612         354781099         01 μ F_SOV.Elect.         P762         25045293         HSJ-1003-01-012           C617_C618         374722734         0.047 μ F±5%,50V.Plastic         P762         25045293         HSJ-1003-01-012           C617_C618         374722734         0.022 μ F±5%,50V.Plastic         P951a         25050444         NSCT-6P268           C619_C622         354781099         0.1 μ F_SOV.Elect.         OPERATIONS WTCH PC BOARD         NSW-4192-5)           C623_C624         354782099         0.68 μ F_SOV.Elect.         OPERATIONS WTCH PC BOARD         NSW-111-SS10.Switches           C631         354782299         0.68 μ F_SOV.Plastic         OPERATIONS         NSCT-5P280.Socket           C632         3547824919         0.7 μ F_SOV.Blect.         S719, S7343         25050556         NSCT-SP280.Socket           C631         354782099         0.8 μ μ F_SOV.Blect.         S740         NSCT-SP280.Socket <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td>			•			
C463,C464         354781099         O.J. μ. F.SOV,Elect.         C767         354761099         10 μ. F.SSV,Clect.         7 (767)         374721724         4 (700 μ. F.SSV,OV,Plastic)         C760         374721724         4 (700 μ. F.SSV,OV,Plastic)         C760         354761009         10 μ. F.SSV,Elect.         P761         25045172         HSJ-1003-01-020           C603-C608         354761099         0.1 μ. F.SOV,Elect.         P762         25045293         HSJ-1003-01-020           C615,C616         374724734         0.024 μ. F.SS,SOV,Plastic         P51a         25050444         NSCT-6P268           C617,C618         37472224         0.022 μ. F.SOV,Elect.         O.				- , , , , , , , , ,		
C465(∠4666)         334721024         1000pE±5%,50V,Plastic         C770         37424724         4700pE±5%,50V,Plastic         C760-C608         C860-C608         354781099         10 μ F.S5V,Elect.         P761         25045129         HSI-1003-01-020           C609-C612         354781099         0.1 μ F.S0V,Elect.         P762         25045293         HSI-1003-01-012           C617-C618         37472234         0.022 μ F.S%,50V,Plastic         Socket         NSCT-6P268           C617-C618         374782294         0.02 μ F.S9V,Elect.         OPERATION SWITCH PC BOARD         NSCT-6P268           C625-C629         353782299         0.22 μ F.S0V,Elect.         OPERATION SWITCH PC BOARD         NSCT-6P268           C631         354780479         47 μ F.S0V,Elect.         OPERATION SWITCH PC BOARD         NSCT-6P268           C632-C629         353782299         0.22 μ F.S0V,Elect.         OPERATION SWITCH PC BOARD NSWITCH PC BOARD NS			=	C767	-	10 μ F.35V.Elect.
C457_C4686         354741009         47 μ F, 16 V, Elect.         P760         25043172         HSJ-1003-01-020           C603-C608         354761009         10 μ F, 50 V, Elect.         P762         25043172         HSJ-1003-01-012           C615.C616         374721734         0.047 μ F±5%, 50 V, Plastic         Socket           C615.C618         374721734         0.021 μ ±5%, 50 V, Plastic         P501         25050444         NSCT-6P268           C619-C622         354781099         0.1 μ F, 50 V, Elect.         OPERATION SWITCH PC BOARD (NASW-4192-5)           C623-C623         354781099         0.2 μ F, 50 V, Elect.         CHOUIT NO.         PART NO.         DESCRIPTION           C631         354786899         0.6 μ F, 50 V, Elect.         S719, S743         25035548         NPS-111-S510, Switches           C631         354786899         0.6 μ F, 50 V, Elect.         S719, S743         25035548         NPS-111-S510, Switch           C636         354772194         470 μ F, 63 V, Elect.         S719, S743         25035548         NPS-111-S510, Switch           C637         374721734         0.047 μ F ±5%, 50 V, Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C638         374722542         250 μ F, 16 V, Elect.         R600         5104258         N11 R			·			•
C603-C608e         35478 (1009         0.1 μ F.50V, Elect.         P761         25045 172         HSJ-1003-01-02           C607-C612         35478 (1099)         0.1 μ F.50V, Elect.         P762         25045 293         HSJ-1003-01-012           C617, C618         374722734         0.047 μ F.50V, Elect.         P951a         25050444         NSCT-6P268           C619-C622         35478 (1099)         0.1 μ F.50V, Elect.         OPERATION SWTTCH PC BOARD TASW-4192-5)           C623-C629         35378 (2999)         0.22 μ F.50V, Elect.         C16CUT NO.         PART NO.         DESCRIPTION           C631         35478 (899)         0.68 μ F.50V, Elect.         S719, S73         25035548         NPS-111-S510, Switches           C631         35478 (899)         0.68 μ F.50V, Elect.         S719, S73         25035548         NPS-111-S510, Switches           C631         35478 (294)         470 μ F.53V, Elect.         S719, S74         25059456         NSCT-5P280, Socket           C632         35478 (294)         470 μ F.53V, Elect.         S719, S74         25059456         NSCT-5P280, Socket           C631         35478 (2194)         470 μ F.53V, Elect.         R600         PART NO.         DESCRIPTION           C632         35473 (1094)         10 μ F.35V, Elect.         R600	•		-	0.770		
C69-C612         354781099         0.1 μ F.50V.Elect.         P762         25045293         HSI-1003-01-012           C615,C616         374724734         0.047 μ F.5%,50V.Plastic         P591a         25050444         NSCT-6P268           C617,C618         374722734         0.022 μ F.50V.Elect.         P591a         25050444         NSCT-6P268           C623,C624         354780479         4.7 μ F.50V.Elect.         OPERATION SWITCH PC BOARD (NASW-4192-5)           C623,C632         354781009         10 μ F.35V.Elect.         S719,3733         25035548         NP5-111-S10,8 witchs           C631         35478899         0.8 μ F.50V.Elect.         S744         25035548         NP5-111-S10,8 witchs           C631         35478899         0.8 μ F.50V.Elect.         S744         25035548         NP5-111-S10,8 witchs           C631         35478299         0.8 μ F.50V.Elect.         S744         25035458         NP5-111-S10,8 witchs           C631         354782091         470 μ F.63V.Elect.         F700         25050456         NSCT-5P280,5 ocket           C636         35472219         470 μ F.5%,50V.Plastic         R600         5104258         N11RGLC250KWT15Z.Variable resistor           C641         35476109         10 μ F.35V.Elect.         C10         RC1         R			•	P761		HSJ-1003-01-020
C615,C616         374724734         0.047 μ F±5%,50V,Plastic         P951a         2500,0444         NSCT-6P268           C617,C618         374722234         0.022 μ F±5%,50V,Plastic         P951a         2500,0444         NSCT-6P268           C631,C624         354781099         0.1 μ F±5%,50V,Elect.         OPERATION S WTCH PC BOARD (NASW-4192-5)           C625-C629         353782299         0.2 μ F±50V,Elect.         S719,S743         25035548         NPS-111-S510,Switches           C631         354786899         0.68 μ F±50V,Elect.         S744         25035548         NPS-111-S510,Switches           C635         35478199         470 μ F±5%,50V,Plastic         F702         25050456         NSCT-5P280,Socket           C636         354724719         470 μ F±5%,50V,Plastic         P702         25050456         NSCT-5P280,Socket           C637         37472243         0.047 μ F±5%,50V,Plastic         C601         NPUT BALANCE         NUMBEC VALUE           C638         354761099         10 μ F±5%,50V,Plastic         C601         S104258         N11RGLC250KWT15Z,Variable resistor           C641         354761099         10 μ F±35V,Elect.         C1001         PART NO.         DESCRIPTION           C642-C664         354761099         10 μ F±35V,Elect.         C1002         22			·			
C617,C618         374722234         0.022 μ F±5%,50V,Plastic         P951a         25050444         NSCT-6P268           C619-C622         354781099         0.1 μ F.50V,Elect.         OPERATION SWITCH PC BOARD (NASW-4192-5)           C623,C629         353782299         0.22 μ F.50V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C630,C632         354761009         10 μ F.35V,Elect.         S719,S743         25035548         NFS-11-S510,Switchs           C631         354786899         0.68 μ F.50V,Elect.         S744         25030456         NSCT-5P280,Socket           C636         35472179         470 μ F.6.3V,Elect.         F02         25050456         NSCT-5P280,Socket           C637         374724734         400 μ F±5.5%,S0V,Plastic         RF0C         NSCT-5P280,Socket           C639         354742219         220 μ F±6.5%,S0V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C640         354761009         10 μ F±5.5%,S0V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F±5.5%,S0V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C664,C669         354741009         10 μ F±5.5%,50V,Plastic         TUO1         240088         FE3			•	1,02		
C619-C622         354781099         0.1 μ F,50V,Elect.         OPERATION SWITCH PC BOARD (NASW-4192-5)           C623-C624         354780479         4.7 μ F,50V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C630-C632         354761009         10 μ F,35V,Elect.         S719,5743         25035548         NPS-111-S510,Switches           C631         354786899         0.68 μ F,50V,Elect.         S744         25035548         NPS-111-S510,Switch           C636         354724719         470 μ F,63V,Elect.         S744         25035548         NPS-111-S510,Switch           C636         354724719         470 μ F,63V,Elect.         S740         25050456         NSCT-5P280,Socket           C637         3747224734         0.047 μ F±5%,50V,Plastic         INPUT BALANCE VOLUME PC BARD (NAETC-4193-5)           C638         354762199         220 μ F,16V,Elect.         R600         5104258         N11RGLC250KWT15Z,Variable resistor           C641         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C641-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661         354781009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DE			•	P051a		NSCT-6P268
C623,C624         354780479         4.7 μ F,50V,Elect.         CPERATION STITCH PC BOARD (NASW-4192-5)           C625-C629         353782299         0.22 μ F,50V,Elect.         C719,S14         25035548         NPS-111-S510,Switches           C631         354786899         0.68 μ F,50V,Elect.         5744         25035548         NPS-111-S510,Switch           C635,C648         374722224         2200pF±5%,50V,Plastic         P702         25030456         NSCT-5P280,Socket           C636         334724734         0.047 μ F±5%,50V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C639         33472219         20 μ F,16V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C640         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661         354780109         1 μ F,55V,Elect.         CIRCUIT NO.         PART NO.			•	19514	25050	11001 01200
C625-C629         353782299         0.22 μ F,50V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C630,C632         354761009         10 μ F,53V,Elect.         S719,S743         25035548         NPS-111-S510,Switch           C631         354786889         0.68 μ F,50V,Elect.         S744         25035548         NSCT-5P280,Socket           C636         354724719         470 μ F,53V,Elect.         SCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				OPER ATION S	WITCH PC ROARD	(NA SW-4192-5)
C630_C632         354761009         10 μ F,35V,Elect.         S719,S743         25035548         NPS-111-S510,Switches           C631         354786899         0.68 μ F,S0V,Elect.         S744         25035548         NPS-111-S510,Switches           C635,C648         374722224         2200pF±5%,S0V,Plastic         P702         25050456         NSCT-5P280,Socket           C636         354724719         470 μ F,63V,Elect.         NPUT BALANCE VOLUME PC BOARD (NAETC-4193-5)           C638         374725624         5600pF±5%,S0V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C639         35476219         220 μ F,16V,Elect.         R600         5104258         N11RGLC250kWT15Z,Variable resistor           C640         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661, C662         35478109         10 μ F,35V,Elect.         CIRCUIT NO.	•					•
C631         354786899         0.68 μ F.50V,Elect.         S744         25035548         NPS-111-S510.Switch           C635,C648         374722224         2200pF ± 5%,50V,Plastic         P702         25050456         NSCT-5P280,Socket           C636         354724719         470 μ F.53V,Elect.         TUNET BALANCE VOLUME PC BOARD (NAETC-4193-5)           C637         374724734         0.047 μ F±5%,50V,Plastic         CIRCUT NO.         PART NO.         DESCRIPTION           C639         354742219         220 μ F,16V,Elect.         CIRCUT NO.         PART NO.         DESCRIPTION           C640         354761099         10 μ F,35V,Elect.         CIRCUT NO.         PART NO.         DESCRIPTION           C642-C646         354761099         10 μ F,35V,Elect.         CIRCUT NO.         PART NO.         DESCRIPTION           C649-C652         354761099         10 μ F,35V,Elect.         Tront end         Front end           C661         354780109         1 μ F,50V,Elect.         TUO01         240088         FE337-A07           C662,C669         374725624         5600pF ± 5%,50V,Plastic         Q107         22240090         LA1266           C665         354764709         47 μ F,50V,Elect.         Q102         22240093         LA1266           C671,C673 <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td>			•			
C635,C648         37472224         2200pE±5%,50V,Plastic         P702         25050456         NSCT-5P280,Socket           C636         354724719         470 μ F,6.3V,Elect.         INPUT BALANCE VOLUME PC BOARD (NAETC-4193-5)           C638         374725624         5600pE±5%,50V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C639         354761009         10 μ F,35V,Elect.         R600         5104258         N11RGLC250KWT15Z,Variable resistor           C641         374723324         3300pE±5%,50V,Plastic         TUNER CIRCUIT PC BOARD (NAETH-4194-5)           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C649-C652         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661         354780109         1 μ F,50V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C662,C669         374725624         5600pF±5%,50V,Plastic         ICs         LA 1266           C664,C668         37472104         0.1 μ F±5%,50V,Plastic         Q104         22240039         LA 1266           C666,C667         354784799         47 μ F,50V,Elect.         Q201         22240293         NJM4558L-D           C671,C67			•			
C636         354724719         470 μ F,6.3 V,Elect.         INPUT BALANCE VOLUME PC BOARD (NAETC 4193-5)           C637         374724734         0.047 μ F±-5%,50V,Plastic         INPUT BALANCE VOLUME PC BOARD (NAETC 4193-5)           C638         374725624         5600pE±5%,50V,Plastic         R600         5104258         N11RGL C250RWT15Z,Variable resistor           C640         354761009         10 μ F,35V,Elect.         TUNER CIRCUIT PC BOARD (NAET-4194-5)           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C645         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661         354780109         1 μ F,50V,Elect.         TU001         240088         F5337-A07           C664.C668         37472104         0.1 μ F±5%,50V,Plastic         Q104         22240039         LA1266           C665.C665         354784709         47 μ F,16V,Elect.         Q201         22240040         LM7001           C661.C667         37578479         0.47 μ F±5%,50V,Plastic         Q201         22240242         An7470           C671.C673         37572144         0.1 μ F±5%,50V,Plastic         Q208         22240243         NJM4558L-D           C672,C674			·			
C637         374724734         0.047 μ			=	F 702	23030430	113C1-31 260,30CKC1
C638         3747225624         5600pF±5%,50V,Plastic         CIRCUIT NO.         PART NO.         DESCRIPTION           C639         354742219         220 μ F.16V,Elect.         R600         5104258         N11RGLC250KWT15Z,Variable resistor           C640         354761009         10 μ F.35V,Elect.         TUNER CIRCUIT PC BOARD (NARF-4194-5)           C642-C646         354761009         10 μ F.35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C649-C652         354780109         1 μ F.50V,Elect.         TU001         240088         FE337-A07           C662,C669         374725624         5600pF±5%,50V,Plastic         Q104         22240039         LA1266           C664,C668         374721044         0.1 μ F±5%,50V,Plastic         Q107         22240090         LM7001           C666,C667         354784799         0.47 μ F±50V,Elect.         Q208         22240242         AN7470           C671,C673         354721019         100 μ F.6.3V,Elect.         Q208         22240293         NJM4558L-D           C672,C674         374721044         0.1 μ F±5%,50V,Plastic         Transistors         NJM4558L-D           C821,C822         354761009         10 μ F±5%,50V,Plastic         Q102         2211723         28C1923-O           C87			·	INIDIET DAI AN	ICE VOLLIME DC DA	DARD (NIAETC 4102 5)
C639         354742219         220 μ F,16V,Elect.         R600         5104258         N11RGLC250KWT15Z,Variable resistor           C640         354761009         10 μ F,35V,Elect.         TUNER CIRCUIT PC BOARD (NARF-4194-5)           C641         374723324         3300pF±5%,50V,Plastic         TUNER CIRCUIT NO.         PART NO.         DESCRIPTION           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C661         354780109         1 μ F,50V,Elect.         TU001         240088         F5337-A07           C662,C669         374725624         5600pF±5%,50V,Plastic         ICs         C666,6666         354744709         47 μ F,16V,Elect.         Q107         22240039         LA1266           C665         354744709         47 μ F,16V,Elect.         Q201         22240242         AN7470           C671,C673         354721019         100 μ F,63V,Elect.         Q201         22240240         M1458L-D           C672,C674         374721044         0.1 μ F±5%,50V,Plastic         Transistors           C821,C822         354761009         10 μ F,35V,Elect.         Q102         2211723         2SC1923-O           C871         8csistor         Resistor         Q103,Q106         2211245			•			
C640         354761009         10 μ F,35V,Elect.         TUNER CIRC UT PC BOARD (NARF-4194-5)           C641         374723324         3300pF±5%,50V,Plastic         TUNER CIRC UT NO.         PART NO.         DESCRIPTION           C649-C652         354761009         10 μ F,35V,Elect.         CIRC UT NO.         PART NO.         DESCRIPTION           C661         354780109         1 μ F,50V,Elect.         TU001         240088         FE337-A07           C662,C669         374725624         5600pF±5%,50V,Plastic         Q104         22240039         LA1266           C664,C668         374721044         0.1 μ F±5%,50V,Plastic         Q107         22240090         LM7001           C666,C667         354784799         0.47 μ F,50V,Elect.         Q208         22240242         AN7470           C671,C673         354721019         100 μ F,6.3V,Elect.         Q208         22240247 or         BA15218N or           C672,C674         374721044         0.1 μ F±5%,50V,Plastic         Transistors         Transistors           C821,C822         354761009         10 μ F,35V,Elect.         Q102         2211723         2SC1940-R           C871         354721019         100 μ F,6.3V,Elect.         Q103,Q106         2213284         2SC1740S-R           Resistor			<del>-</del>			
C641         374723324         3300pF±5%,50V,Plastic         TUNER CIRCUT PC BOARD (NARF-4194-5)           C642-C646         354761009         10 μ F,35V,Elect.         CIRCUT NO.         PART NO.         DESCRIPTION           C649-C652         354761009         10 μ F,35V,Elect.         TU001         240088         FE337-A07           C661         354780109         1 μ F,50V,Elect.         TU001         240088         FE337-A07           C662,C669         374725624         5600pF±5%,50V,Plastic         CICs           C664,C668         374721044         0.1 μ F±5%,50V,Plastic         Q104         22240039         LA1266           C665         354784799         0.47 μ F,50V,Elect.         Q201         22240242         AN7470           C671,C673         354721019         100 μ F,6.3V,Elect.         Q208         22240247 or         BA15218N or           C675         375524744         0.47 μ F±5%,50V,Plastic         Transistors           C821,C822         354761009         10 μ F,53V,Elect.         Q102         2211723         2SC1740S-R           C871         354721019         100 μ F,6.3V,Elect.         Q103,Q106         2213284         2SC1740S-R           C871         354721019         100 μ F,6.3V,Elect.         Q10         221245			•	KOUU	5104238	NTTROLC230K WTT32, Variable resistor
C642-C646         354761009 $10 \mu$ F,35V,Elect.         CIRCUIT NO.         PART NO.         DESCRIPTION           C649-C652         354761009 $10 \mu$ F,35V,Elect.         TU001         240088         FE337-A07           C661         354780109 $1 \mu$ F,50V,Elect.         TU001         240088         FE337-A07           C662,C669         374725624         5600pF ±5%,50V,Plastic         ICs           C664,C668         334721044         0.1 $\mu$ F±5%,50V,Plastic         Q104         22240039         LA1266           C665         354784799         0.47 $\mu$ F,50V,Elect.         Q107         22240090         LM7001           C671,C673         354721019         100 $\mu$ F,6.3V,Elect.         Q208         22240242         AN7470           C672,C674         374721044         0.1 $\mu$ F±5%,50V,Plastic         Transistors         Transistors           C821,C822         354761009         10 $\mu$ F±5%,50V,Plastic         Transistors         Transistors           C821,C822         354761009         10 $\mu$ F;6.3V,Elect.         Q102         2211723         2SC1923-O           C871         354721019         100 $\mu$ F;6.3V,Elect.         Q103,Q106         2213284         2SC1740S-R           Resistor         Q10 $\mu$ F;6.3V,Elect. <td< td=""><td></td><td></td><td>·</td><td>TINED CIDCI</td><td>UT DO DOADD ALAI</td><td>DE 4104 E)</td></td<>			·	TINED CIDCI	UT DO DOADD ALAI	DE 4104 E)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			-		•	•
C661         354780109         1 μ F,50V,Elect.         TU001         240088         FE337-A07           C662,C669         374725624         5600pF±5%,50V,Plastic         ICs           C664,C668         374721044         0.1 μ F±5%,50V,Plastic         Q104         22240039         LA1266           C665         354744709         47 μ F,16V,Elect.         Q107         22240090         LM7001           C666,C667         354784799         0.47 μ F,50V,Elect.         Q201         22240242         AN7470           C671,C673         354721019         100 μ F,6.3V,Elect.         Q208         22240293         NJM4558L-D           C675         375524744         0.1 μ F±5%,50V,Plastic         Transistors           C821,C822         354761009         10 μ F,6.3V,Elect.         Q102         2211723         2SC1923-O           C871         354721019         100 μ F,6.3V,Elect.         Q105         2213284         2SC1740S-R           Resistor         Resistor         Q108,Q109         2213510         DTA114ES           Sockets         Q205,Q206         2212794         2SD1468-R           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P601a         25050446			·	CIRCUIT NO.		DESCRIPTION
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			·	TT 1001		FF227 + 07
C664,C668         374721044         0.1 μ F±5%,50V,Plastic         Q104         22240039         LA1266           C665         354744709         47 μ F,16V,Elect.         Q107         22240090         LM7001           C666,C667         354784799         0.47 μ F,50V,Elect.         Q201         22240242         AN7470           C671,C673         354721019         100 μ F,6.3V,Elect.         Q208         22240247 or         BA15218N or           C672,C674         374721044         0.1 μ F±5%,50V,Plastic         22240293         NJM4558L-D           C675         375524744         0.47 μ F±5%,50V,Plastic         Transistors           C821,C822         354761009         10 μ F,6.3V,Elect.         Q102         2211723         2SC1923-O           C871         Resistor         Q105         2212445         2SK365-GR           R481-R484         5144014A         N16RQL100KBT25F,Variable         Q108,Q109         2213510         DTA114ES           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P601a         25050446         NSCT-10P270         D101,D102         223132         1K60           P602a         25050447         NSCT-12P271         D201,D202         223163 or <td< td=""><td></td><td></td><td></td><td>10001</td><td></td><td>FE337-A07</td></td<>				10001		FE337-A07
C665         354744709         47 μ F,16V,Elect.         Q107         22240090         LM7001           C666,C667         354784799         0.47 μ F,50V,Elect.         Q201         22240242         AN7470           C671,C673         354721019 $100 \mu$ F,6.3V,Elect.         Q208         22240247 or         BA15218N or           C672,C674         374721044 $0.1 \mu$ F±5%,50V,Plastic         22240293         NJM4558L-D           C675         375524744 $0.47 \mu$ F±5%,50V,Plastic         Transistors           C821,C822         354761009 $10 \mu$ F,6.3V,Elect.         Q102         2211723         2SC1923-O           C871         354721019 $100 \mu$ F,6.3V,Elect.         Q105         2212445         2SK365-GR           R481-R484         5144014A         N16RQL100KBT25F,Variable         Q108,Q109         2213510         DTA114ES           Sockets         Q200         2213510         DTA114ES           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P601a         25050446         NSCT-10P270         D101,D102         223132         1K60           P602a         25050447         NSCT-12P271         D201,D202         223163 or         1SS133 or			=	0104		T 4 1000
C666,C667         354784799         0.47 μ F,50V,Elect.         Q201         22240242         AN7470           C671,C673         354721019 $100 μ F,6.3V$ ,Elect.         Q208         22240247 or         BA15218N or           C672,C674         374721044 $0.1 μ F \pm 5\%$ ,50V,Plastic         22240293         NJM4558L-D           C675         375524744 $0.47 μ F \pm 5\%$ ,50V,Plastic         Transistors           C821,C822         354761009 $10 μ F,5.3V$ ,Elect.         Q102         2211723         2SC1923-O           C871         354721019 $100 μ F,6.3V$ ,Elect.         Q105         2212445         2SK365-GR           R481-R484         5144014A         N16RQL100KBT25F,Variable         Q108,Q109         2213510         DTA114ES           Sockets         Q205,Q206         2212794         2SD1468-R           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P601a         25050446         NSCT-10P270         D101,D102         223132         1K60           P602a         25050448         NSCT-14P272         D103         224450512         MTZ5.1B           P603a         25050447         NSCT-12P271         D206,D207         223205         1SS270A			•			
C671,C673       354721019       100 μ F,6.3V,Elect.       Q208       22240247 or       BA15218N or         C672,C674       374721044 $0.1 \mu F \pm 5\%,50V,Plastic$ 22240293       NJM4558L-D         C675       375524744 $0.47 \mu F \pm 5\%,50V,Plastic$ Transistors         C821,C822       354761009 $10 \mu F,55V,Elect.$ Q102       2211723       2SC1923-O         C871       354721019 $100 \mu F,6.3V,Elect.$ Q105       2212445       2SK365-GR         Resistor       Q105       2212445       2SK365-GR         R481-R484       5144014A       N16RQL100KBT25F,Variable       Q108,Q109       2213510       DTA114ES         Sockets       Q205,Q206       2212794       2SD1468-R         P611       2000556       NSAS-6P512       Q207       2213510       DTA114ES         P601a       25050446       NSCT-10P270       D101,D102       223132       1K60         P602a       25050448       NSCT-14P272       D103       224450512       MTZ5.1B         P603a       25050447       NSCT-12P271       D201,D202       223163 or       1SS133 or         D206,D207       223205       1SS270A         Crystal oscillator       XTL-7.2M <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td>			•			
C672,C674 $374721044$ $0.1 \mu F \pm 5\%,50V,Plastic$ $22240293$ NJM4558L-D         C675 $375524744$ $0.47 \mu F \pm 5\%,50V,Plastic$ Transistors         C821,C822 $354761009$ $10 \mu F,55V,Elect.$ Q102 $2211723$ $2SC1923-O$ C871 $354721019$ $100 \mu F,6.3V,Elect.$ Q103,Q106 $2213284$ $2SC1740S-R$ Resistor       Resistor       Q105 $2212445$ $2SK365-GR$ R481-R484 $5144014A$ N16RQL100KBT25F,Variable       Q108,Q109 $2213510$ DTA114ES         Sockets       Sockets       Q205,Q206 $2212794$ $2SD1468-R$ P611 $2000556$ NSAS-6P512       Q207 $2213510$ DTA114ES         P612 $2009990024$ NSAS-10P0048       Diodes         P601a $25050446$ NSCT-10P270       D101,D102 $223132$ 1K60         P602a $25050448$ NSCT-12P271       D201,D202 $223163$ or       1SS133 or         P603a $25050447$ NSCT-12P271       D206,D207 $223205$ 1SS270A         Crystal oscillator       X104       3010158 or       XTL-7.2M   <			•	•		
C675       375524744 $0.47 \mu F \pm 5\%$ ,50V,Plastic       Transistors         C821,C822       354761009 $10 \mu F$ ,35V,Elect.       Q102       2211723       2SC1923-O         C871       354721019 $100 \mu F$ ,6.3V,Elect.       Q103,Q106       2213284       2SC1740S-R         Resistor       Resistor       Q105       2212445       2SK365-GR         R481-R484       5144014A       N16RQL100KBT25F,Variable       Q108,Q109       2213510       DTA114ES         Sockets       Q205,Q206       2212794       2SD1468-R         P611       2000556       NSAS-6P512       Q207       2213510       DTA114ES         P601a       25050446       NSCT-10P270       D101,D102       223132       1K60         P602a       25050448       NSCT-14P272       D103       224450512       MTZ5.1B         P603a       25050447       NSCT-12P271       D201,D202       223105       1SS133 or         P6060       Tyrstal oscillator       Crystal oscillator       XTL-7.2M				Q208		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			·			NJM4558L-D
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			•			
R481-R484 5144014A N16RQL100KBT25F,Variable Sockets Q205,Q206 2212794 2SD1468-R P611 2000556 NSAS-6P512 Q207 2213510 DTA114ES P612 2009990024 NSAS-10P0048 Diodes P601a 25050446 NSCT-10P270 D101,D102 223132 1K60 P602a 25050448 NSCT-14P272 D103 224450512 MTZ5.1B P603a 25050447 NSCT-12P271 D201,D202 223163 or 1SS133 or D206,D207 223205 1SS270A Crystal oscillator X104 3010158 or XTL-7.2M			•			
R481-R484         5144014A         N16RQL100KBT25F,Variable         Q108,Q109         2213510         DTA114ES           Sockets         Q205,Q206         2212794         2SD1468-R           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P612         2009990024         NSAS-10P0048         Diodes           P601a         25050446         NSCT-10P270         D101,D102         223132         1K60           P602a         25050448         NSCT-14P272         D103         224450512         MTZ5.1B           P603a         25050447         NSCT-12P271         D201,D202         223163 or         1SS133 or           D206,D207         223205         1SS270A         Crystal oscillator           X104         3010158 or         XTL-7.2M	C8/1		$100\mu$ F,6.3V,Elect.			
Sockets         Q205,Q206         2212794         2SD1468-R           P611         2000556         NSAS-6P512         Q207         2213510         DTA114ES           P612         2009990024         NSAS-10P0048         Diodes           P601a         25050446         NSCT-10P270         D101,D102         223132         1K60           P602a         25050448         NSCT-14P272         D103         224450512         MTZ5.1B           P603a         25050447         NSCT-12P271         D201,D202         223163 or         1SS133 or           D206,D207         223205         1SS270A         Crystal oscillator           X104         3010158 or         XTL-7.2M						
P611       2000556       NSAS-6P512       Q207       2213510       DTA114ES         P612       2009990024       NSAS-10P0048       Diodes         P601a       25050446       NSCT-10P270       D101,D102       223132       1K60         P602a       25050448       NSCT-14P272       D103       224450512       MTZ5.1B         P603a       25050447       NSCT-12P271       D201,D202       223163 or       1SS133 or         D206,D207       223205       1SS270A         Crystal oscillator       X104       3010158 or       XTL-7.2M	R481-R484		N16RQL100KBT25F, Variable			
P612       2009990024       NSAS-10P0048       Diodes         P601a       25050446       NSCT-10P270       D101,D102       223132       1K60         P602a       25050448       NSCT-14P272       D103       224450512       MTZ5.1B         P603a       25050447       NSCT-12P271       D201,D202       223163 or       1SS133 or         D206,D207       223205       1SS270A         Crystal oscillator       X104       3010158 or       XTL-7.2M						
P601a       25050446       NSCT-10P270       D101,D102       223132       1K60         P602a       25050448       NSCT-14P272       D103       224450512       MTZ5.1B         P603a       25050447       NSCT-12P271       D201,D202       223163 or       1SS133 or         D206,D207       223205       1SS270A         Crystal oscillator       X104       3010158 or       XTL-7.2M				Q207		DTA114ES
P602a 25050448 NSCT-14P272 D103 224450512 MTZ5.1B P603a 25050447 NSCT-12P271 D201,D202 223163 or 1SS133 or D206,D207 223205 1SS270A Crystal oscillator X104 3010158 or XTL-7.2M						
P603a 25050447 NSCT-12P271 D201,D202 223163 or 1SS133 or D206,D207 223205 1SS270A Crystal oscillator X104 3010158 or XTL-7.2M						
D206,D207 223205 1SS270A  Crystal oscillator  X104 3010158 or XTL-7.2M						MTZ5.1B
Crystal oscillator X104 3010158 or XTL-7.2M	P603a	25050447	NSCT-12P271			
X104 3010158 or XTL-7.2M				D206,D207		1SS270A
					·	
3010141				X104		XTL-7.2M
					3010141	

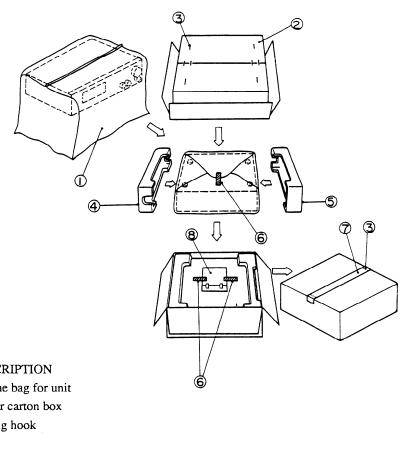
NOTE: THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CIRCUIT NO.	PART NO.	DESCRIPTION	POWER SUPP	LY CIRCUIT PC E	BOA	RD (NAPS-4195-5)
	Coils and transform	ners	CIRCUIT NO.	PART NO.		DESCRIPTION
L101	233401	NFIF-4072		Transistors		
L102	233402	NFIF-4073	Q951	221282		DTC144ES
L103	233411M022	NCH-1375	Q952	2213650		DTD113ZS
L151	232148	NMRF-7050		Diodes		
L152	232139	NMIF-4062	D951-D954	22380032,		1SR139-100,
L201,L202	233355A	NMC-4059		22380035 or		GP104003E or
2201,2202	Ceramic filters			22380046		AM01Z
X101,X103	3010071	SFE10.7MA5(RED)	D955	223163 or		1SS133 or
X151	3010123	SFZ-450JL	D995,D996	223205		1SS270A
X152	3010076	BFU-450C	2,,5,2,,0	Power transform	ner	1000/011
71132	Capacitors	210 .000	T902	2300670		NPT-1111D
C001,C108	354741019	100 μ F,16V,Elect.	1702	Capacitors	ш	, III I-IIIID
C106	354784799	$0.47 \mu$ F,50V,Elect.	C901	3500065A	A	DE7150FZ103PAC400V/125V,IS
C108	354742209	22 μ F,16V,Elect.	C952	354761019	7.27	$100 \mu$ F,35V,Elect.
		$2.2 \mu$ F, $10 \text{ V, Elect.}$ $2.2 \mu$ F, $50 \text{ V, Elect.}$	C932			100 μ Γ,55 <b>ν</b> ,Ειεςτ.
C112	354780229	, , , ,	D001	Resistors	A	2.234.0 ±200/ 1/234.5-1:4
C113	354784799	$0.47 \mu$ F,50V,Elect.	R901	431523355	Z:\	$3.3M\Omega \pm 20\%$ , 1/2W, Solid
C116	374722234	$0.022 \mu \text{ F} \pm 5\%,50 \text{ V,Plastic}$	R951	442520824		$8.2 \Omega \pm 5\%, 1/2W$ , Metal oxide film
C117	374723334	$0.033 \mu \text{ F} \pm 5\%,50 \text{V,Plastic}$	P000	AC outlet	•	NICOT ADOLA
C118	354780229	2.2 μ F,50V,Elect.	P902	25050409	Z\\ 	, NSCT-4P234
C119	353782299	$0.22 \mu$ F,50V,Elect.		Relay		
C123	354721019	$100 \mu$ F,6.3V,Elect.	RL901	25065248	Δ	NRL-1P15A-DC12-29
C124	354741019	100 μ F,16V,Elect.		Fuse		
C154	354780479	$4.7 \mu$ F,50V,Elect.	F901	252051	Δ	6A ST-6 <d w=""></d>
C155-C157	354761009	$10 \mu$ F,35V,Elect.		Fuseholders		
C159	374724734	$0.047 \mu\text{F} \pm 5\%,50\text{V,Plastic}$	F901a	250113	Δ	SN5051
C160	374721034	$0.01 \mu F \pm 5\%,50 \text{V,Plastic}$		Plug		
C161	353782299	$0.22 \mu$ F,50V,Elect.	P951	25055497		NPLG-6P472
C201	354744719	$470 \mu$ F,16V,Elect.				
C202	354742209	$22 \mu$ F,16V,Elect.				
C205	353782299	$0.22 \mu$ F,50V,Elect.				
C206	354780109	$1 \mu$ F,50V,Elect.				
C207	354780339	$3.3 \mu$ F,50V,Elect.				
C208	370134714	$470 pF \pm 5\%, 100 V$ , Plastic				
C209	374724734	$0.047 \mu\text{F}\pm5\%,50\text{V,Plastic}$				
C211,C212	374721824	$1800$ pF $\pm 5\%$ ,50V,Plastic				
C213,C214	354742209	$22 \mu$ F,16V,Elect.				
C215,C216	354761009	$10 \mu$ F,35V,Elect.				
C219,C220	374726224	$6200$ pF $\pm5\%$ , $50$ V,Plastic				
C222	354780229	$2.2 \mu$ F,50V,Elect.				
C223	374721024	1000pF±5%,50V,Plastic				
C224	374724734	$0.047 \mu\text{F} \pm 5\%,50\text{V,Plastic}$				
C225,C226	354761009	$10 \mu$ F,35V,Elect.				
	Resistors					
R101	5210266	N06HR 100KBC,Semi-fixed				
R102,R202	5210267	N06HR 200KBC,Semi-fixed				
R201	5210261	N06HR 5KBC,Semi-fixed				
	Terminal					
P101	25060160	NTM-4PDMN086				
	Socket					
P201	25050449	NSCT-16P273				

#### VIDEO AND SUB AMPLIFIER PC BOARD (NAAF-4196-5)

VIDEO AND SOB ANIFERITER PC BOARD (NAAP-4190-5)					
CIRCUIT NO.	PART NO.	DESCRIPTION			
0051	ICs	D.4.7605			
Q251	22240373	BA7625			
Q571,Q572	22240467	SI-18751			
Q881	22240247	BA15218N			
	Transistors				
Q252,Q253	2213354	2SA933S-R			
Q573,Q574	2211732 or	2SC1845-F or			
	2211733	2SC1845-E			
Q883	2213510	DTA114ES			
Q884	2213631 or	RN1241-A or			
	2213632	RN1241-B			
	Diodes				
D251	223163 or	1SS133 or			
D253,D254	223205	1SS270A			
D505,D506	223163 or	1SS133 or			
D571-D574	223205	1SS270A			
	Coils				
L571,L572	231176	S-1.3C			
	Capacitors				
C251,C252	354780229	$2.2 \mu$ F,50V,Elect.			
C253,C254	354724719	470 μ F,6.3V,Elect.			
C255	354721019	$100 \mu$ F,6.3V,Elect.			
C571,C572	354761009	10 μ F,35V,Elect.			
C577,C578	354741019	$100 \mu$ F,16V,Elect.			
C581,C582	374724734	$0.047 \mu\text{F} \pm 5\%,50\text{V,Plastic}$			
C591,C592	354780229	$2.2 \mu$ F,50V,Elect.			
C881,C886	354761009	10 μ F,35V,Elect.			
	Resistors				
R581,R582	442520824	$8.2 \Omega \pm 5\%,1/2$ W,Metal oxide film			
R583,R584	4000059	$0.22\Omega$ , 2W, Metal plate			
	Relaies				
RL505,RL506	25065339	NRL-2P5A-DC24-046			
	Terminal				
P251	25045339	NPJ-4PDYE190			
P502	25060161	NTM-4PDML087			
P506	25045302	NPJ-1PDBL161			
	Plug				
P612a	25055135	NPLG-5P119			
	Sockets				
JL251	25050273	NSCT-9P101			
JL571	25050272	NSCT-8P100			
JL572,JL605	25050267	NSCT-3P95			

# **PACKING VIEW**



REF.NO.	PART NO.	DESCRIPTION
1	29100034A	Styrene bag for unit
2	29052441Y	Master carton box
3	282301	Sealing hook
4	29091449B	Pad R
5	29091448B	Pad L
6	261504	Adhesive tape
7	29110071	Damplon tape

8 Accessary bag	ass'v
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29341755AY	Instruction manual
29341756Y	Instruction manual <c></c>

292111 FM antenna

232140 NMA-3057,AM loop antenna

2010200 Connection cord 3010054 UM-3,Two batteries

24140237Y RC-237S,Remote control transmitter

29365019A Warranty card <N>

29358002J Service station list <N> NOTE: <N>:U.S.A. model
29100097 Styrene bag for accessary <C>:Canadian model

#### **ONKYO** CORPORATION

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200 Williams Drive, Ramsey, N.J. 07446, U.S.A.

Tel: 201-825-7950 Fax: 201-825-8150